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=> d his

     (FILE 'HOME' ENTERED AT 10:47:32 ON 27 MAR 2007)

     FILE 'CAPLUS, MEDLINE' ENTERED AT 10:47:51 ON 27 MAR 2007
L1             0 S ACARBOSE (P) FERMENTATION (P) ALCOHOL
L2             3 S ACARBOSE (P) FERMENTATION BROTH?
L3             1 S ACARBOSE (P) ALCOHOL? (P) PRECIPIT?
L4             0 S ACARBOSE (P) ALCOHOL? (P) CONCENTRAT?
L5             1 S ACARBOSE (P) ETHANOL? (P) PRECIPIT?
L6             1 S ACARBOSE (P) ?ANOL (P) PRECIPIT?
L7             1 S ACARBOSE (P) ?ANOL (P) CONCENT?
L8             0 S ALCOHOL? (P) FERMENTATION BROTH? (P) PRCIPIT?
L9             1 S ACARBOSE (P) ?ANOL (P) CHROMATOGRA?
L10            1 S ACARBOSE (P) ALCOHOL? (P) CHROMATOGRA?
L11            2 S ACARBOSE (P) ALCOHOL? (P) ENZYM?
L12            0 S ACARBOSE (P) ?AMYLOGLUCOSIDASE? (P) COLUMN?
L13            3 S ACARBOSE (P) ?AMYLOGLUCOSIDASE?
L14           16 S ACARBOSE (P) AFFINITY (P) CHROMATOGRA?
L15            0 S ACARBOSE (P) ?AMYLOGLUCOSIDASE? (P) CHROMAT?
L16            6 S ACARBOSE (P) ?FERMENTATION?  (P) PURI?
L17            0 S ACARBOSE (P) ?FERMENTATION?  (P) PURE
L18            0 S ACARBOSE (P) ?FERMENTATION?  (P) CATION EXCHANGE
L19            0 S ACARBOSE (P) ?FERMENTATION?  (P) PRECI?
L20            3 S ALCOHOL? (P) FERMENTATION BROTH? (P) PRECIPIT?
L21           15 S ALCOHOL? (P) FERMENTATION BROTH? (P) CONCENT?
L22           40 S ?ANOL (P) FERMENTATION BROTH? (P) CONCENT?
L23            4 S L22 AND PRECI?
L24           36 S L22 NOT L23
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=> d his

     (FILE 'HOME' ENTERED AT 10:47:32 ON 27 MAR 2007)

     FILE 'CAPLUS, MEDLINE' ENTERED AT 10:47:51 ON 27 MAR 2007
L1             0 S ACARBOSE (P) FERMENTATION (P) ALCOHOL
L2             3 S ACARBOSE (P) FERMENTATION BROTH?
L3             1 S ACARBOSE (P) ALCOHOL? (P) PRECIPIT?
L4             0 S ACARBOSE (P) ALCOHOL? (P) CONCENTRAT?
L5             1 S ACARBOSE (P) ETHANOL? (P) PRECIPIT?
L6             1 S ACARBOSE (P) ?ANOL (P) PRECIPIT?
L7             1 S ACARBOSE (P) ?ANOL (P) CONCENT?
L8             0 S ALCOHOL? (P) FERMENTATION BROTH? (P) PRCIPIT?
L9             1 S ACARBOSE (P) ?ANOL (P) CHROMATOGRA?
L10            1 S ACARBOSE (P) ALCOHOL? (P) CHROMATOGRA?
L11            2 S ACARBOSE (P) ALCOHOL? (P) ENZYM?
L12            0 S ACARBOSE (P) ?AMYLOGLUCOSIDASE? (P) COLUMN?
L13            3 S ACARBOSE (P) ?AMYLOGLUCOSIDASE?
L14           16 S ACARBOSE (P) AFFINITY (P) CHROMATOGRA?
L15            0 S ACARBOSE (P) ?AMYLOGLUCOSIDASE? (P) CHROMAT?
L16            6 S ACARBOSE (P) ?FERMENTATION?  (P) PURI?
L17            0 S ACARBOSE (P) ?FERMENTATION?  (P) PURE
L18            0 S ACARBOSE (P) ?FERMENTATION?  (P) CATION EXCHANGE
L19            0 S ACARBOSE (P) ?FERMENTATION?  (P) PRECI?
L20            3 S ALCOHOL? (P) FERMENTATION BROTH? (P) PRECIPIT?
L21           15 S ALCOHOL? (P) FERMENTATION BROTH? (P) CONCENT?
L22           40 S ?ANOL (P) FERMENTATION BROTH? (P) CONCENT?
L23            4 S L22 AND PRECI?
L24           36 S L22 NOT L23
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L2 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:474833 CAPLUS
DOCUMENT NUMBER: 143:6386
TITLE: Purification process for manufacturing a high purity acarbose
INVENTOR(S): Lin, Chung-Liang; Huang, Tung-Li; Chen, Jeen-Kuan; Wu, Chi-Sheng
PATENT ASSIGNEE(S): Taiwan
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005118686	A1	20050602	US 2004-790069	20040302
JP 2005160463	A	20050623	JP 2004-1337	20040106
PRIORITY APPLN. INFO.:			TW 2003-92133913 A	20031202

AB A purification process for manufacturing a high pure acarbose relates to a process for preparing high pure acarbose from acarbose-containing fermentation broth. The acarbose was purified through steps of alc. precipitation, a strongly acidic cation exchanger chromatog. and an immobilized enzyme affinity chromatog. Acarbose is generally applied in treating diabetes.

L2 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:928233 CAPLUS
DOCUMENT NUMBER: 138:3755
TITLE: Method for purification of acarbose
INVENTOR(S): Keri, Vilmos; Deak, Lajos
PATENT ASSIGNEE(S): Hung.
SOURCE: U.S. Pat. Appl. Publ., 7 pp., Cont.-in-part of U. S. Ser. No. 924,271.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002183262	A1	20021205	US 2002-60831	20020130
US 2002111320	A1	20020815	US 2001-924271	20010807
WO 2003014135	A1	20030220	WO 2002-US2705	20020130
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRIORITY APPLN. INFO.:			US 2000-223492P	P 20000807
			US 2001-924271	A2 20010807

AB The present invention relates to a novel process for the preparation of acarbose. Said process comprises the steps of: acidifying a fermentation broth containing an acarbose; removing particulates from the fermentation broth; adsorbing

the acarbose on a cation-exchanger in the presence of an anion of a weak acid; eluting the acarbose from the cation-exchanger with at least one of a sodium chloride solution and a salt solution; precipitating the acarbose with a solvent; and recovering the precipitated acarbose.

L2 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:123021 CAPLUS
DOCUMENT NUMBER: 136:182542
TITLE: Method for purification of acarbose
INVENTOR(S): Keri, Vilmos; Deak, Lajos
PATENT ASSIGNEE(S): Biogal Gyogyszergyar Rt., Hung.; Teva Pharmaceuticals USA, Inc.
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002012256	A1	20020214	WO 2001-US24729	20010807
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2001084741	A5	20020218	AU 2001-84741	20010807
EP 1309601	A1	20030514	EP 2001-963821	20010807
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

PRIORITY APPLN. INFO.: US 2000-223492P P 20000807
WO 2001-US24729 W 20010807

AB The present invention relates to a novel process for the preparation of acarbose. Said process comprises the steps of: acidifying a fermentation broth containing an acarbose; removing particulates from the fermentation broth; adsorbing the acarbose on a cation-exchanger in the presence of an anion of a weak acid; eluting the acarbose from the cation-exchanger with at least one of hydrochloric acid and the weak acid; precipitating the acarbose with a solvent; and separating the acarbose crystals.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 1 OF 1 MEDLINE on STN

ACCESSION NUMBER: 87190439 MEDLINE

DOCUMENT NUMBER: PubMed ID: 3106037

TITLE: Purification and characterization of extracellular alpha-amylase and glucoamylase from the yeast Candida antarctica CBS 6678.

AUTHOR: De Mot R; Verachtert H

SOURCE: European journal of biochemistry / FEBS, (1987 May 4) Vol. 164, No. 3, pp. 643-54.
Journal code: 0107600. ISSN: 0014-2956.

PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 198706

ENTRY DATE: Entered STN: 3 Mar 1990
Last Updated on STN: 3 Mar 1990
Entered Medline: 25 Jun 1987

AB An alpha-amylase and a glucoamylase were purified to homogeneity from the culture fluid of beta-cyclodextrin-grown Candida antarctica CBS 6678 by protamine sulfate treatment, ammonium sulfate precipitation, gel filtration (Sephadex G-75 sf, Ultrogel AcA 54), DEAE-Sephacel chromatography, hydroxyapatite chromatography and affinity chromatography on acarbose--AH-Sepharose 4B. Both enzymes were monomeric glycoproteins with fairly different amino acid compositions. Their apparent relative molecular mass, sedimentation coefficient (Szero20,w), isoelectric point, absorption coefficient (280 nm), pH and temperature optima were estimated as 48,500, 4.7 S, 10.1, 1.74 cm2 mg-1, 4.2 and 57 degrees C, respectively, for glucoamylase and as 50,000, 4.9 S, 10.3, 1.53 cm2 mg-1, 4.2 and 62 degrees C, respectively, for alpha-amylase. Kinetic analyses indicated that both enzymes preferentially hydrolyzed high-molecular-mass substrates, including some raw starches. alpha-Amylase was active on cyclodextrins, whereas debranching activity was demonstrated for glucoamylase. Trestatins were potent inhibitors of both alpha-amylase (Ki less than 1 microM) and glucoamylase (Ki less than 0.1 microM), being more effective than Bay e 4609 (Ki less than 10 microM). Glucoamylase was selectivity and strongly inhibited by acarbose (Ki less than 0.1 microM). Activity of the latter enzyme was also affected by 1-deoxynojirimycin (Ki less than 1 mM), maltitol and amino alcohols (Ki less than 10 mM). Unlike alpha-amylase, glucoamylase adsorbed strongly onto raw starch, the adsorption site being non-identical with the active site.

L5 ANSWER 1 OF 1 MEDLINE on STN
ACCESSION NUMBER: 2006721500 IN-PROCESS
DOCUMENT NUMBER: PubMed ID: 16909265
TITLE: Pullulan production by tropical isolates of Aureobasidium pullulans.
AUTHOR: Prasongsuk Sehanat; Berhow Mark A; Dunlap Christopher A; Weisleder David; Leathers Timothy D; Eveleigh Douglas E; Punnapayak Hunsa
CORPORATE SOURCE: Plant Biomass Utilization Research Unit, Department of Botany, Faculty of Science, Chulalongkorn University, Bangkok, Thailand.
SOURCE: Journal of industrial microbiology & biotechnology, (2007 Jan) Vol. 34, No. 1, pp. 55-61. Electronic Publication: 2006-08-15.
Journal code: 9705544. ISSN: 1367-5435.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 13 Dec 2006
Last Updated on STN: 27 Feb 2007

AB Tropical isolates of Aureobasidium pullulans previously isolated from distinct habitats in Thailand were characterized for their capacities to produce the valuable polysaccharide, pullulan. A. pullulans strain NRM2, the so-called "color variant" strain, was the best producer, yielding 25.1 g pullulan l(-1) after 7 days in sucrose medium with peptone as the nitrogen source. Pullulan from strain NRM2 was less pigmented than those from the other strains and was remarkably pure after a simple ethanol precipitation. The molecular weight of pullulan from all cultures dramatically decreased after 3 days growth, as analyzed by high performance size exclusion chromatography. Alpha-amylase with apparent activity against pullulan was expressed constitutively in sucrose-grown cultures and induced in starch-grown cultures. When the alpha-amylase inhibitor acarbose was added to the culture medium, pullulan of slightly higher molecular weight was obtained from late cultures, supporting the notion that alpha-amylase plays a role in the reduction of the molecular weight of pullulan during the production phase.

L9 ANSWER 1 OF 1 MEDLINE on STN
ACCESSION NUMBER: 2006721500 IN-PROCESS
DOCUMENT NUMBER: PubMed ID: 16909265
TITLE: Pullulan production by tropical isolates of Aureobasidium pullulans.
AUTHOR: Prasongsuk Sehanat; Berhow Mark A; Dunlap Christopher A; Weisleder David; Leathers Timothy D; Eveleigh Douglas E; Punnapayak Hunsa
CORPORATE SOURCE: Plant Biomass Utilization Research Unit, Department of Botany, Faculty of Science, Chulalongkorn University, Bangkok, Thailand.
SOURCE: Journal of industrial microbiology & biotechnology, (2007 Jan) Vol. 34, No. 1, pp. 55-61. Electronic Publication: 2006-08-15.
Journal code: 9705544. ISSN: 1367-5435.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 13 Dec 2006
Last Updated on STN: 27 Feb 2007

AB Tropical isolates of Aureobasidium pullulans previously isolated from distinct habitats in Thailand were characterized for their capacities to produce the valuable polysaccharide, pullulan. A. pullulans strain NRM2, the so-called "color variant" strain, was the best producer, yielding 25.1 g pullulan l(-1) after 7 days in sucrose medium with peptone as the nitrogen source. Pullulan from strain NRM2 was less pigmented than those from the other strains and was remarkably pure after a simple ethanol precipitation. The molecular weight of pullulan from all cultures dramatically decreased after 3 days growth, as analyzed by high performance size exclusion chromatography. Alpha-amylase with apparent activity against pullulan was expressed constitutively in sucrose-grown cultures and induced in starch-grown cultures. When the alpha-amylase inhibitor acarbose was added to the culture medium, pullulan of slightly higher molecular weight was obtained from late cultures, supporting the notion that alpha-amylase plays a role in the reduction of the molecular weight of pullulan during the production phase.

L10 ANSWER 1 OF 1 MEDLINE on STN
ACCESSION NUMBER: 87190439 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3106037
TITLE: Purification and characterization of extracellular alpha-amylase and glucoamylase from the yeast Candida antarctica CBS 6678.
AUTHOR: De Mot R; Verachtert H
SOURCE: European journal of biochemistry / FEBS, (1987 May 4) Vol. 164, No. 3, pp. 643-54.
Journal code: 0107600. ISSN: 0014-2956.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198706
ENTRY DATE: Entered STN: 3 Mar 1990
Last Updated on STN: 3 Mar 1990
Entered Medline: 25 Jun 1987

AB An alpha-amylase and a glucoamylase were purified to homogeneity from the culture fluid of beta-cyclodextrin-grown Candida antarctica CBS 6678 by protamine sulfate treatment, ammonium sulfate precipitation, gel filtration (Sephadex G-75 sf, Ultrogel AcA 54), DEAE-Sephacel chromatography, hydroxyapatite chromatography and affinity chromatography on acarbose--AH-Sepharose 4B. Both enzymes were monomeric glycoproteins with fairly different amino acid compositions. Their apparent relative molecular mass, sedimentation coefficient (Szero20,w), isoelectric point, absorption coefficient (280 nm), pH and temperature optima were estimated as 48,500, 4.7 S, 10.1, 1.74 cm2 mg-1, 4.2 and 57 degrees C, respectively, for glucoamylase and as 50,000, 4.9 S, 10.3, 1.53 cm2 mg-1, 4.2 and 62 degrees C, respectively, for alpha-amylase. Kinetic analyses indicated that both enzymes preferentially hydrolyzed high-molecular-mass substrates, including some raw starches. alpha-Amylase was active on cyclodextrins, whereas debranching activity was demonstrated for glucoamylase. Trestatins were potent inhibitors of both alpha-amylase (Ki less than 1 microM) and glucoamylase (Ki less than 0.1 microM), being more effective than Bay e 4609 (Ki less than 10 microM). Glucoamylase was selectivity and strongly inhibited by acarbose (Ki less than 0.1 microM). Activity of the latter enzyme was also affected by 1-deoxynojirimycin (Ki less than 1 mM), maltitol and amino alcohols (Ki less than 10 mM). Unlike alpha-amylase, glucoamylase adsorbed strongly onto raw starch, the adsorption site being non-identical with the active site.

L11 ANSWER 1 OF 2 MEDLINE on STN
ACCESSION NUMBER: 2006272479 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16700860
TITLE: Diabetes prevention: is there more to it than lifestyle changes?.
AUTHOR: Gruber A; Nasser K; Smith R; Sharma J C; Thomson G A
CORPORATE SOURCE: Sherwood Forest Hospitals NHS Trust, King's Mill Hospital, Sutton-in-Ashfield, Nottinghamshire, UK.. agruber@doctors.org.uk
SOURCE: International journal of clinical practice, (2006 May) Vol. 60, No. 5, pp. 590-4. Ref: 30
Journal code: 9712381. ISSN: 1368-5031.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200607
ENTRY DATE: Entered STN: 17 May 2006
Last Updated on STN: 26 Jul 2006
Entered Medline: 25 Jul 2006

AB Over the past years, there has been an explosive increase in the prevalence of type 2 diabetes (T2DM) and this is expected to continue, entailing associated morbidity and mortality. An increasing number of studies explore the different ways T2DM could be prevented. On-going lifestyle modifications need to be addressed. High-risk patients should be given counselling on weight loss, possibly using a low glycaemic index diet, with a target of around 7-10% over 6-12 months, as well as instruction for increasing physical activity to around 150 min of physical exercise weekly (NNT = 4-8). Moderate alcohol consumption and coffee consumption may also be of benefit (NNT = 89 and 66, respectively). Metformin (NNT = 14), acarbose (NNT = 11) and troglitazone (NNT = 6) have been shown to prevent/delay T2DM and angiotensin-converting enzyme (ACE) inhibitors and statins appear to have an adjunctive role (NNT = 42 and 112, respectively). Trials with orlistat and bariatric surgery have also prevented T2DM (NNT = 36 and 6, respectively), and forthcoming treatment with GLP1 mimetics appears promising. Diabetes prevention studies should help create well-defined strategies for screening and treating high-risk populations in the real world, as prevention is our only chance to alleviate the ever growing burden of diabetes mellitus in the world.

L11 ANSWER 2 OF 2 MEDLINE on STN
ACCESSION NUMBER: 87190439 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3106037
TITLE: Purification and characterization of extracellular alpha-amylase and glucoamylase from the yeast Candida antarctica CBS 6678.
AUTHOR: De Mot R; Verachtert H
SOURCE: European journal of biochemistry / FEBS, (1987 May 4) Vol. 164, No. 3, pp. 643-54.
Journal code: 0107600. ISSN: 0014-2956.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198706
ENTRY DATE: Entered STN: 3 Mar 1990
Last Updated on STN: 3 Mar 1990
Entered Medline: 25 Jun 1987

AB An alpha-amylase and a glucoamylase were purified to homogeneity from the culture fluid of beta-cyclodextrin-grown Candida antarctica CBS 6678 by protamine sulfate treatment, ammonium sulfate precipitation, gel

filtration (Sephadex G-75 sf, Ultrogel AcA 54), DEAE-Sephacel chromatography, hydroxyapatite chromatography and affinity chromatography on acarbose--AH-Sepharose 4B. Both enzymes were monomeric glycoproteins with fairly different amino acid compositions. Their apparent relative molecular mass, sedimentation coefficient (Szero20,w), isoelectric point, absorption coefficient (280 nm), pH and temperature optima were estimated as 48,500, 4.7 S, 10.1, 1.74 cm2 mg-1, 4.2 and 57 degrees C, respectively, for glucoamylase and as 50,000, 4.9 S, 10.3, 1.53 cm2 mg-1, 4.2 and 62 degrees C, respectively, for alpha-amylase. Kinetic analyses indicated that both enzymes preferentially hydrolyzed high-molecular-mass substrates, including some raw starches. alpha-Amylase was active on cyclodextrins, whereas debranching activity was demonstrated for glucoamylase. Trestatins were potent inhibitors of both alpha-amylase (Ki less than 1 microM) and glucoamylase (Ki less than 0.1 microM), being more effective than Bay e 4609 (Ki less than 10 microM). Glucoamylase was selectivity and strongly inhibited by acarbose (Ki less than 0.1 microM). Activity of the latter enzyme was also affected by 1-deoxynojirimycin (Ki less than 1 mM), maltitol and amino alcohols (Ki less than 10 mM). Unlike alpha-amylase, glucoamylase adsorbed strongly onto raw starch, the adsorption site being non-identical with the active site.

L13 ANSWER 2 OF 3 MEDLINE on STN
ACCESSION NUMBER: 94102356 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8276068
TITLE: Changes in islet glucan-1,4-alpha-glucosidase activity modulate sulphonylurea-induced but not cholinergic insulin secretion.
AUTHOR: Salehi A; Lundquist I
CORPORATE SOURCE: Department of Pharmacology, University of Lund, Sweden.
SOURCE: European journal of pharmacology, (1993 Oct 19) Vol. 243, No. 2, pp. 185-91.
Journal code: 1254354. ISSN: 0014-2999.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: (COMPARATIVE STUDY)
(IN VITRO)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199402
ENTRY DATE: Entered STN: 18 Feb 1994
Last Updated on STN: 3 Mar 2000
Entered Medline: 4 Feb 1994

AB We have previously presented indirect in vivo evidence for the involvement of islet acid glucan-1,4-alpha-glucosidase (acid amyloglucosidase), a lysosomal glucose-producing enzyme, in certain insulin secretory processes. In the present in vitro and in vivo investigation, we studied whether differential changes in islet acid amyloglucosidase activity would be related to the insulin secretory response induced by two mechanistically different secretagogues, the sulphonylurea derivative, glibenclamide and the acetylcholine receptor agonist, carbachol. It was observed that the selective alpha-glucosidehydrolase inhibitors emiglitate and acarbose markedly reduced glibenclamide-induced insulin release from isolated islets. Insulin release stimulated by carbachol or the protein kinase C activator TPA (12-O-tetradecanoylphorbol 13-acetate), was not inhibited. Basal insulin secretion was unaffected by emiglitate and acarbose. Further, pretreatment of mice with emiglitate resulted in a marked reduction of the in vivo insulin response to glibenclamide. Moreover, in vivo pretreatment with purified fungal amyloglucosidase ('enzyme replacement'), a procedure known to increase islet amyloglucosidase activity, greatly enhanced the insulin response to i.v. glibenclamide. This insulin release was accompanied by a marked depression of the blood glucose levels. In contrast, enzyme pretreatment did not influence the insulin response or the blood glucose levels after carbachol. The data strongly suggest that islet acid amyloglucosidase is involved in the insulin secretory processes induced by glibenclamide but not in those involving stimulation of muscarinic receptors or direct activation of protein kinase C. The results also indicate separate or at least partially separate pathways for insulin release induced by glibenclamide and cholinergic stimulation.

L13 ANSWER 3 OF 3 MEDLINE on STN
ACCESSION NUMBER: 92279185 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1594557
TITLE: The relationship of islet amyloglucosidase activity and glucose-induced insulin secretion.
AUTHOR: Lundquist I; Panagiotidis G
CORPORATE SOURCE: Department of Cell Biology, Faculty of Health Sciences, University of Linkoping, Sweden.
SOURCE: Pancreas, (1992) Vol. 7, No. 3, pp. 352-7.
Journal code: 8608542. ISSN: 0885-3177.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)

LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199207
ENTRY DATE: Entered STN: 10 Jul 1992
Last Updated on STN: 3 Mar 2000
Entered Medline: 2 Jul 1992

AB We have previously presented evidence for the involvement of islet acid amyloglucosidase, a lysosomal glycogen-hydrolyzing enzyme, in certain insulin secretory processes. In the present investigation, we studied whether differential changes in islet amyloglucosidase activity could be related to the insulin secretory response to glucose. It was observed that the dose-response curve for glucose-induced insulin response in vivo was shifted to the left by pretreatment of mice with purified fungal amyloglucosidase. In enzyme-pretreated mice, the ED50 was 2.1 mmol/kg glucose as compared with 5.7 mmol/kg in saline-pretreated controls (p less than 0.005). Also, the maximal insulin response to glucose was enhanced by amyloglucosidase pretreatment. Parenteral administration to mice (four injections during 2 days) of the pseudotetrasaccharide acarbose, a recognized inhibitor of intestinal alpha-glucosidases, surprisingly induced a marked increase in the activities of islet acid amyloglucosidase (+ 120%; p less than 0.001) and acid alpha-glucosidase (+ 45%; p less than 0.01) without affecting the activities of other lysosomal enzymes such as acid phosphatase and N-acetyl-beta-D-glucosaminidase. No effect on the microsomal neutral alpha-glucosidase was recorded. Moreover, in these mice, the insulin secretory response to glucose was enhanced both at a maximal dose of glucose 11.1 mmol/kg and at a dose in the ED25-ED50 range, 3.3 mmol/kg (p less than 0.005). Direct addition of acarbose to islet homogenates strongly suppressed acid amyloglucosidase activity, the EC50 being approximately 1 microM. Acid alpha-glucosidase activity was also strongly inhibited, whereas the activities of acid phosphatase and N-acetyl-beta-D-glucosaminidase were unaffected. Neutral alpha-glucosidase was slightly suppressed. (ABSTRACT TRUNCATED AT 250 WORDS)

L14 ANSWER 8 OF 16 MEDLINE on STN
ACCESSION NUMBER: 1998203259 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9542155
TITLE: alpha-Glucosidase from the hepatopancreas of the shrimp, Penaeus vannamei (Crustacea-Decapoda).
AUTHOR: Le Chevalier P; Van Wormhoudt A
CORPORATE SOURCE: Institut Universitaire de Technologie, Quimper, France.. chevalie@iutquimp.univ-brest.fr
SOURCE: The Journal of experimental zoology, (1998 Apr 15) Vol. 280, No. 6, pp. 384-94.
Journal code: 0375365. ISSN: 0022-104X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199805
ENTRY DATE: Entered STN: 20 May 1998
Last Updated on STN: 18 Dec 2002
Entered Medline: 8 May 1998

AB Penaeus vannamei is an omnivorous species, and it can be assumed that a high level of carbohydrates is necessary for growth. Alpha-glucosidases are important enzymes necessary for the ultimate liberation of glucose residues from various carbohydrates. Using acarbose affinity chromatography, a glycosylated alpha-glucosidase with a molecular mass of approximately 105 kDa was isolated for the first time from the hepatopancreas of the shrimp. Exhibiting an optimal catalytic activity in the temperature range from 40 degrees C to 50 degrees C at pH 6, the purified enzyme hydrolyses alpha 1-4 bonds and liberates glucose from different oligo and polysaccharides. By contrast to other known glucosidases, no alpha 1-6 glucose link with hydrolysis has been observed. This could explain the different rates of growth in shrimp aquaculture with starches from various origins. The amino-acid composition, together with the partial sequence of a hydrolytic peptide, shows a high degree of similarity to the alpha-glucosidases reported for various organisms including yeast and fungi and may help determine the phylogeny of the family.

L14 ANSWER 9 OF 16 MEDLINE on STN
ACCESSION NUMBER: 97330817 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9187252
TITLE: Efficient purification, characterization and partial amino acid sequencing of two alpha-1,4-glucan lyases from fungi.
AUTHOR: Yu S; Christensen T M; Kragh K M; Bojsen K; Marcussen J
CORPORATE SOURCE: Danisco Biotechnology, Danisco A/S, Langebrogade 1, Copenhagen K, Denmark.. g7sy@danisco.dk
SOURCE: Biochimica et biophysica acta, (1997 May 23) Vol. 1339, No. 2, pp. 311-20.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199707
ENTRY DATE: Entered STN: 16 Jul 1997
Last Updated on STN: 16 Jul 1997
Entered Medline: 1 Jul 1997

AB alpha-1,4-Glucan lyases from the fungi Morchella costata and M. vulgaris were purified by affinity chromatography on beta-cyclodextrin-sepharose, followed by ion exchange and gel filtration. The purified enzymes produced 1,5-anhydro-D-fructose from glucose oligomers and polymers with alpha-1,4-glucosidic linkages, such as maltose, maltosaccharides, amylopectin, and glycogen. The lyases were

basically inactive towards glucans linked through alpha-1,1, alpha-1,3 or alpha-1,6 linkages. For both enzymes the molecular mass was around 121,000 Da as determined by matrix-assisted laser desorption mass spectrometry. The pI for the lyases from M. costata and M. vulgaris was 4.5 and 4.4, respectively. The lyases exhibited an optimal pH range of pH 5.5 to pH 7.5 with maximal activity at pH 6.5. Optimal temperature was between 37 degrees C and 48 degrees C for the two lyases, depending on the substrates. The lyases were examined with 12 inhibitors to starch hydrolases and it was found that they were inhibited by the -SH group blocking agent PCMB and the following sugars and their analogues: glucose, maltitol, maltose, 1-deoxynojirimycin and acarbose. Partial amino acid sequences accounting for about 35% of the lyase polypeptides were determined. In the overlapping region of the sequences, the two lyases showed 91% identity. The two lyases also cross-reacted immunologically.

L14 ANSWER 10 OF 16 MEDLINE on STN
ACCESSION NUMBER: 96409375 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8814357
TITLE: Thermostability of purified human pancreatic alpha-amylase is increased by the combination of Ca2+ and human serum albumin.
AUTHOR: Tessier A J; Dombi G W; Bouwman D L
CORPORATE SOURCE: Harper Hospital, Department of Surgery, Detroit, MI 48201, USA. atessie/cms.cc.wayne.edu.
SOURCE: Clinica chimica acta; international journal of clinical chemistry, (1996 Aug 15) Vol. 252, No. 1, pp. 11-20. Journal code: 1302422. ISSN: 0009-8981.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199612
ENTRY DATE: Entered STN: 28 Jan 1997
Last Updated on STN: 28 Jan 1997
Entered Medline: 18 Dec 1996

AB Pancreatic fluid from a patient with a post operative pancreatic fistula was used to isolate human alpha-amylase by means of acarbose affinity chromatography. Amylase thermostability was measured in 4 solutions: (1) EDTA-dialyzed; (2) dialyzed solution plus 0.15 mmol/l (1.0 g/dl) human serum albumin; (3) dialyzed solution plus 0.25 mmol/l (1.0 mg/dl) calcium ions; and (4) dialyzed solution with both human serum albumin and calcium ions. Amylase activity was measured at predetermined times in samples heated to 60 degrees C. Thermostability was characterized by t1/2, the time to 50% initial amylase enzyme activity. In the dialyzed solution t1/2 was 0.75 +/- 0.19 min. This rose to 1.62 +/- 0.34 min with added human serum albumin, and to 8.24 +/- 0.13 min with added calcium ions. The combination of human serum albumin and calcium ions resulted in a synergistic increase of t1/2 to 180 +/- 26 min. These findings support our contention that human serum albumin, calcium ions and possibly other body fluid constituents must be considered in any utility involving amylase thermostability as a clinically relevant diagnostic marker.

L14 ANSWER 11 OF 16 MEDLINE on STN
ACCESSION NUMBER: 93277459 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8503847
TITLE: Production, purification and characterization of the catalytic domain of glucoamylase from Aspergillus niger.
AUTHOR: Stoffer B; Frandsen T P; Busk P K; Schneider P; Svendsen I; Svensson B
CORPORATE SOURCE: Carlsberg Laboratory, Department of Chemistry, Valby, Copenhagen, Denmark.
SOURCE: The Biochemical journal, (1993 May 15) Vol. 292 (Pt 1),

pp. 197-202.
Journal code: 2984726R. ISSN: 0264-6021.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199306
ENTRY DATE: Entered STN: 16 Jul 1993
Last Updated on STN: 16 Jul 1993
Entered Medline: 25 Jun 1993

AB The catalytic domain of glucoamylases G1 and G2 from Aspergillus niger is produced in vitro in high yield by limited proteolysis using either subtilisin Novo or subtilisin Carlsberg. Purification by affinity chromatography on an acarbose-Sepharose column followed by ion-exchange chromatography on HiLoad Q-Sepharose leads to separation of a number of structurally closely related forms of domain. The cleavage occurs primarily between Val-470 and Ala-471 as indicated by C-terminal sequencing, whereas the N-terminus is intact. Subtilisin Carlsberg, in addition, produces a type of domain which is hydrolysed before Ser-444, an O-glycosylated residue. ... This leaves the fragment Ser-444-Val-470 disulphide-bonded to the large N-terminal part of the catalytic domain. Subtilisin Novo, in contrast, tends to yield a minor fraction of forms extending approx. 30-40 amino-acid residues beyond Val-470. The thermostability is essentially the same for the single-chain catalytic domain and the original glucoamylases G1 and G2, whereas the catalytic domain cut between Ser-443 and Ser-444 is less thermostable. For both types of domain the kinetic parameters, Km and kcat., for hydrolysis of maltose are very close to the values found for glucoamylases G1 and G2.

L14 ANSWER 12 OF 16 MEDLINE on STN
ACCESSION NUMBER: 92369111 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1380303
TITLE: Interaction of catalytic-site mutants of Bacillus subtilis alpha-amylase with substrates and acarbose.
AUTHOR: Takase K
CORPORATE SOURCE: Department of Molecular Biology, National Institute of Agrobiological Resources, Ibaraki, Japan.
SOURCE: Biochimica et biophysica acta, (1992 Aug 21) Vol. 1122, No. 3, pp. 278-82.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199209
ENTRY DATE: Entered STN: 9 Oct 1992
Last Updated on STN: 3 Mar 2000
Entered Medline: 22 Sep 1992

AB The interactions of the three catalytic-site mutants of Bacillus subtilis alpha-amylase/(DN176 [Asp-176----Asn], EQ208 [Glu-208----Gln] and DN269 [Asp-269----Asn]) with substrates and a pseudo-oligosaccharide inhibitor, acarbose, have been studied by means of difference absorption spectroscopy and affinity chromatography. The addition of maltopentaose or soluble starch to the inactive mutant enzymes mostly resulted in difference spectra characteristic of tryptophan perturbation, enabling determination of the dissociation constants. The results show that conversion of Glu-208 to Gln greatly enhanced substrate binding, implying that Glu-208 interacts unfavorably with the substrate's ground state, preventing its optimal fit to the active site. The affinity for acarbosè was greatly reduced in DN269 and EQ208, but less so in DN176, suggesting that Asp-269 and Glu-208 are more important than Asp-176 in stabilizing the transition state. These results

are consistent with Glu-208 and Asp-269 being the key catalytic residues, as proposed for Taka-amylase A.

L14 ANSWER 13 OF 16 MEDLINE on STN
ACCESSION NUMBER: 91224312 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1709115
TITLE: Topographical and enzymatic characterization of amylases from the extremely thermophilic eubacterium Thermotoga maritima.
AUTHOR: Schumann J; Wrba A; Jaenicke R; Stetter K O
CORPORATE SOURCE: Institut fur Biophysik und Physikalische Biochemie, Universitat Regensburg, Germany.
SOURCE: FEBS letters, (1991 Apr 22) Vol. 282, No. 1, pp. 122-6. Journal code: 0155157. ISSN: 0014-5793.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T) (RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199106
ENTRY DATE: Entered STN: 30 Jun 1991
Last Updated on STN: 29 Jan 1996
Entered Medline: 12 Jun 1991

AB The hyperthermophilic eubacterium Thermotoga maritima uses starch as a substrate, without releasing amylase activity into the culture medium. The enzyme is associated with the 'toga'. Its expression level is too low to allow the isolation of the pure enzyme. Using cycloheptaamylose and acarbose affinity chromatography and common chromatographic procedures, two enzyme fractions are obtained. They differ in specificity, pH-optimum, temperature dependence and stability. Substrate specificity and Ca2+ dependence indicate alpha-, beta- and gluco-amylase activity. Compared with alpha-amylase from Bacillus licheniformis (Tmax = 75 degrees C), the amylases from Thermotoga maritima show exceedingly high thermal stability with an upper temperature limit at 95 degrees C. Significant turnover occurs only between 70 and 100 degrees C, i.e. in the range of viability of the microorganism.

L14 ANSWER 14 OF 16 MEDLINE on STN
ACCESSION NUMBER: 89275526 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2786460
TITLE: Single step affinity chromatographic purification of human alpha-amylase from aspirated duodenal juice and its application in the measurement of pancreatic alpha-amylase synthesis rates in man.
AUTHOR: Ogden J M; O'Keefe S J; Ehlers M R; Kirsch R E; Marks I N
CORPORATE SOURCE: Gastrointestinal Clinic, Groote Schuur Hospital, University of Cape Town Medical School, Republic of South Africa.
SOURCE: Clinica chimica acta; international journal of clinical chemistry, (1989 Feb 28) Vol. 180, No. 2, pp. 129-39. Journal code: 1302422. ISSN: 0009-8981.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198907
ENTRY DATE: Entered STN: 9 Mar 1990
Last Updated on STN: 3 Mar 2000
Entered Medline: 20 Jul 1989

AB Human alpha-amylase was purified from aspirated duodenal juice to electrophoretic homogeneity in a single step by affinity chromatography with the competitive inhibitor acarbose (IC50 = 1.22 mumol/l) as ligand. Duodenal juice was applied to an agarose

resin to which acarbose had been coupled covalently via a 1.9 nm spacer group. Pure alpha-amylase, eluted with free acarbose, had a molecular mass of 55,000, and isoelectrofocusing revealed the presence of six isozymes with pI values of 7.3, 6.8, 6.7, 6.5, 6.4 and 6.3, all of which possessed amylase activity based on positive starch/iodine staining. The potential usefulness of this one-step purification procedure in the measurement of pancreatic alpha-amylase synthesis rates was evaluated in two control patients with non-pancreatic disease. Aspirated duodenal juice was obtained during a pulse/continuous intravenous 4 h infusion of [14C]leucine together with secretin and pancreozymin, and alpha-amylase purified using our protocol. Pancreatic alpha-amylase synthesis rates were determined from the rate of incorporation of [14C]leucine into alpha-amylase; values of 4.4 and 5.1 h were obtained for the two control patients.

L14 ANSWER 15 OF 16 MEDLINE on STN
ACCESSION NUMBER: 87190439 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3106037
TITLE: Purification and characterization of extracellular alpha-amylase and glucoamylase from the yeast Candida antarctica CBS 6678.
AUTHOR: De Mot R; Verachtert H
SOURCE: European journal of biochemistry / FEBS, (1987 May 4) Vol. 164, No. 3, pp. 643-54.
Journal code: 0107600. ISSN: 0014-2956.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198706
ENTRY DATE: Entered STN: 3 Mar 1990
Last Updated on STN: 3 Mar 1990
Entered Medline: 25 Jun 1987

AB An alpha-amylase and a glucoamylase were purified to homogeneity from the culture fluid of beta-cyclodextrin-grown Candida antarctica CBS 6678 by protamine sulfate treatment, ammonium sulfate precipitation, gel filtration (Sephadex G-75 sf, Ultrogel AcA 54), DEAE-Sephacel chromatography, hydroxyapatite chromatography and affinity chromatography on acarbose --AH-Sepharose 4B. Both enzymes were monomeric glycoproteins with fairly different amino acid compositions. Their apparent relative molecular mass, sedimentation coefficient (Szero20,w), isoelectric point, absorption coefficient (280 nm), pH and temperature optima were estimated as 48,500, 4.7 S, 10.1, 1.74 cm2 mg-1, 4.2 and 57 degrees C, respectively, for glucoamylase and as 50,000, 4.9 S, 10.3, 1.53 cm2 mg-1, 4.2 and 62 degrees C, respectively, for alpha-amylase. Kinetic analyses indicated that both enzymes preferentially hydrolyzed high-molecular-mass substrates, including some raw starches. alpha-Amylase was active on cyclodextrins, whereas debranching activity was demonstrated for glucoamylase. Trestatins were potent inhibitors of both alpha-amylase (Ki less than 1 microM) and glucoamylase (Ki less than 0.1 microM), being more effective than Bay e 4609 (Ki less than 10 microM). Glucoamylase was selectivity and strongly inhibited by acarbose (Ki less than 0.1 microM). Activity of the latter enzyme was also affected by 1-deoxynojirimycin (Ki less than 1 mM), maltitol and amino alcohols (Ki less than 10 mM). Unlike alpha-amylase, glucoamylase adsorbed strongly onto raw starch, the adsorption site being non-identical with the active site.

L14 ANSWER 16 OF 16 MEDLINE on STN
ACCESSION NUMBER: 86296199 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3091050
TITLE: Purification of glucoamylase by acarbose (BAY g-5421) affinity chromatography.
AUTHOR: Ono K; Smith E E

CONTRACT NUMBER: DE-03118 (NIDCR)
SOURCE: Biotechnology and applied biochemistry, (1986 Apr-Jun) Vol. 8, No. 2-3, pp. 201-9.
Journal code: 8609465. ISSN: 0885-4513.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198610
ENTRY DATE: Entered STN: 21 Mar 1990
Last Updated on STN: 3 Mar 2000
Entered Medline: 23 Oct 1986

AB Aspergillus niger and Rhizopus sp. glucoamylases were purified on an affinity chromatography column from commercially available, impure enzyme preparations. Up to 2 mg of glucoamylase protein was bound without leakage to a 1-ml affinity gel column (0.7 X 2.5 cm) possessing a covalently linked acarbose ligand (1 mg acarbose/g wet gel), and the bound enzyme was specifically released by irrigation of the column with a solution of maltose. A complete cycle of purification was accomplished in about 8 h. Glucoamylases were recovered, in more than 80% yield, free of alpha-amylase activity and possessing specific activities comparable to those of preparations obtained by time-consuming, multistep procedures involving several ion-exchange and hydrophobic column fractionations. Thus, acarbose affinity chromatography provides a general method for the rapid and efficient purification of the glucoamylases, and seems to be ideally suited for scale-up for the commercial purification of these enzymes.

L14 ANSWER 1 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:474833 CAPLUS
DOCUMENT NUMBER: 143:6386
TITLE: Purification process for manufacturing a high purity acarbose
INVENTOR(S): Lin, Chung-Liang; Huang, Tung-Li; Chen, Jeen-Kuan; Wu, Chi-Sheng
PATENT ASSIGNEE(S): Taiwan
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005118686	A1	20050602	US 2004-790069	20040302
JP 2005160463	A	20050623	JP 2004-1337	20040106
PRIORITY APPLN. INFO.:			TW 2003-92133913 A	20031202

AB A purification process for manufacturing a high pure acarbose relates to a process for preparing high pure acarbose from acarbose-containing fermentation broth. The acarbose was purified through steps of alc. precipitation, a strongly acidic cation exchanger chromatog. and an immobilized enzyme affinity chromatog. Acarbose is generally applied in treating diabetes.

L14 ANSWER 2 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1988:524834 CAPLUS
DOCUMENT NUMBER: 109:124834
TITLE: Effective purification of glucoamylase in koji, a solid culture of Aspergillus oryzae on steamed rice, by affinity chromatography using an immobilized acarbose (BAY g-5421)
AUTHOR(S): Ono, Kazuhisa; Shigeta, Seiko; Oka, Satoru
CORPORATE SOURCE: Fac. Eng., Hiroshima Univ., Higashi-Hiroshima, 724, Japan
SOURCE: Agricultural and Biological Chemistry (1988), 52(7), 1707-14
CODEN: ABCHA6; ISSN: 0002-1369
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Glucoamylase (GA) was purified from koji, a solid culture of A. oryzae on steamed rice, by extraction with 1% NaCl solution, precipitation with EtOH, and acarbose affinity chromatog. The purified enzyme was homogeneous on gel filtration, PAGE and SDS-PAGE, ultracentrifugation, and IEF. The enzyme released β-glucose as a sole product from soluble starch and maltooligosaccharides. The other common and inherent features of GAs were also confirmed in the GA from A. oryzae. The enzyme was a glycoprotein containing .apprx.4.8% glucosamine and 7.8% neutral saccharides.

L14 ANSWER 3 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1986:567504 CAPLUS
DOCUMENT NUMBER: 105:167504
TITLE: Purification of glucoamylase by acarbose (BAY g-5421) affinity chromatography
AUTHOR(S): Ono, Kazuhisa; Smith, Eric E.
CORPORATE SOURCE: Sch. Med., Univ. Miami, Miami, FL, 33101, USA
SOURCE: Biotechnology and Applied Biochemistry (1986), 8(2-3), 201-9
CODEN: BABIEC; ISSN: 0885-4513

DOCUMENT TYPE: Journal
LANGUAGE: English
AB Glucoamylase (I) of Aspergillus niger and Rhizopus species was purified from com. available, impure enzyme prepns. by affinity chromatog. on acarbose (II) columns. Up to 2 mg I was bound without leakage to a 1-mL affinity gel column possessing a covalently linked II ligand (1 mg II/g wet gel), and the bound enzyme was specifically released by irrigation of the column with a solution of maltose. A complete cycle of purification was accomplished in .apprx.8 h. Both I activities were recovered in >80% yield, free of α-amylase activity and possessing specific activities comparable to those of prepns. obtained by time-consuming, multistep procedures involving several ion-exchange and hydrophobic column fractionations. Thus, II affinity chromatog. provides a general method for the rapid and efficient purification of I, and appears to be ideally suited for scale-up for the com. purification of these enzymes.

L14 ANSWER 4 OF 16 MEDLINE on STN
ACCESSION NUMBER: 2005550205 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16198511
TITLE: Enzymatic characterization of a maltogenic amylase from Lactobacillus gasseri ATCC 33323 expressed in Escherichia coli.
AUTHOR: Oh Ko-Woon; Kim Myo-Jeong; Kim Hae-Yeong; Kim Byung-Yong; Baik Moo-Yeol; Auh Joong-Hyuck; Park Cheon-Seok
CORPORATE SOURCE: Department of Food Science and Biotechnology, Institute of Life Sciences and Resources, KyungHee University, Yongin 449-701, South Korea.
SOURCE: FEMS microbiology letters, (2005 Nov 1) Vol. 252, No. 1, pp. 175-81. Electronic Publication: 2005-09-19. Journal code: 7705721. ISSN: 0378-1097.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200512
ENTRY DATE: Entered STN: 18 Oct 2005
Last Updated on STN: 18 Dec 2005
Entered Medline: 12 Dec 2005
AB A gene corresponding to a maltogenic amylase (MAase) in Lactobacillus gasseri ATCC 33323 (lgma) was cloned and expressed in Escherichia coli. The recombinant LGMA was efficiently purified 24.3-fold by one-step Ni-NTA affinity chromatography. The final yield and specific activity of the purified recombinant LGMA were 68% and 58.7 U/mg, respectively. The purified enzyme exhibited optimal activity for beta-CD hydrolysis at 55 degrees C and pH 5. The relative hydrolytic activities of LGMA to beta-CD, soluble starch or pullulan was 8:1:1.9. The activity of LGMA was strongly inhibited by most metal ions, especially Zn(2+), Fe(2+), Co(2+) and by EDTA. LGMA possessed some unusual properties distinguishable from typical MAases, such as being in a tetrameric form, having hydrolyzing activity towards the alpha-(1,6)-glycosidic linkage and being inhibited by acarbose.

L14 ANSWER 5 OF 16 MEDLINE on STN
ACCESSION NUMBER: 2004032039 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14732931
TITLE: Structure-based discovery of a new affinity ligand to pancreatic alpha-amylase.
AUTHOR: Westerfors Maria; Tedebark Ulf; Andersson Hans O; Ohrman Sara; Choudhury Devapriya; Ersoy Oguz; Shinohara Yasuro; Axen Andreas; Carredano Enrique; Baumann Herbert
CORPORATE SOURCE: Amersham Biosciences, Bjorkgatan 30, Uppsala, SE-75184, Sweden.
SOURCE: Journal of molecular recognition : JMR, (2003 Nov-Dec) Vol.

16, No. 6, pp. 396-405.
Journal code: 9004580. ISSN: 0952-3499.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200409
ENTRY DATE: Entered STN: 21 Jan 2004
Last Updated on STN: 2 Sep 2004
Entered Medline: 1 Sep 2004

AB A ligand useful for affinity capture of porcine pancreatic alpha-amylase was found by virtual screening of the commercially available compound data base MDL Available Chemicals Directory. Hits from the virtual screening were investigated for binding by nuclear magnetic resonance (NMR) and surface plasmon resonance. Selected compounds were tested for inhibition of the enzyme using a NMR-based assay. One of the binders found was covalently coupled to a chromatographic resin and a column, packed with this resin, could retain alpha-amylase, which subsequently was eluted by introduction of the known inhibitor acarbose to the elution buffer.

L14 ANSWER 6 OF 16 MEDLINE on STN
ACCESSION NUMBER: 2003358724 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12890998
TITLE: Inhibitory effects of human and porcine alpha-amylase on CCK-8-stimulated lipase secretion of isolated rat pancreatic acini.
AUTHOR: Jonas Ludwig; Mikkat Ulrike; Lehmann Renate; Schareck Wolfgang; Walzel Hermann; Schroder Werner; Lopp Hilja; Pussa Tonu; Toomik Peeter
CORPORATE SOURCE: Department of Pathology, Faculty of Medicine, University of Rostock, Germany.. ludwig.jonas@med.uni-rostock.de
SOURCE: Pancreatology : official journal of the International Association of Pancreatology (IAP) ... [et al.], (2003) Vol. 3, No. 4, pp. 342-8.
Journal code: 100966936. ISSN: 1424-3903.
PUB. COUNTRY: Switzerland
DOCUMENT TYPE: (IN VITRO)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200403
ENTRY DATE: Entered STN: 1 Aug 2003
Last Updated on STN: 17 Mar 2004
Entered Medline: 16 Mar 2004

AB Previously we have demonstrated inhibitory effects of the plant lectin wheat germ agglutinin (WGA) on (125)I-CCK-8 binding to pancreatic AR42J cells as well as on CCK-8-stimulated Ca(2+) release and alpha-amylase secretion of rat pancreatic acini or acinar cells. Therefore, it is entirely conceivable that alpha-amylase having several lectin-like carbohydrate recognition domains can modulate the CCK-8 stimulated lipase secretion. Human alpha-amylase, purified from pancreatic juice by affinity chromatography to homogeneity, and commercial porcine pancreatic alpha-amylase inhibit CCK-8-stimulated lipase secretion of rat pancreatic acini in a concentration-dependent manner. Acarbose, a specific inhibitor of alpha-amylase, was without effect on CCK-8-induced cellular lipase secretion. The data presented here provide evidence for a regulatory function of alpha-amylase in CCK-8-stimulated pancreatic secretion.

L14 ANSWER 7 OF 16 MEDLINE on STN

ACCESSION NUMBER: 2000088601 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10620329
TITLE: Kinetics and inhibition of cyclomaltodextrinase from alkalophilic Bacillus sp. I-5.
AUTHOR: Kim M J; Park W S; Lee H S; Kim T J; Shin J H; Yoo S H; Cheong T K; Ryu S; Kim J C; Kim J W; Moon T W; Robyt J F; Park K H
CORPORATE SOURCE: Research Center for New Bio-Materials in Agriculture, Department of Food Science, Seoul National University, Suwon, 441-744, Korea.
SOURCE: Archives of biochemistry and biophysics, (2000 Jan 1) Vol. 373, No. 1, pp. 110-5.
Journal code: 0372430. ISSN: 0003-9861.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200002
ENTRY DATE: Entered STN: 18 Feb 2000
Last Updated on STN: 18 Feb 2000
Entered Medline: 9 Feb 2000

AB The cyclomaltodextrinase from alkalophilic Bacillus sp. I-5 (CDase I-5) was expressed in Escherichia coli and the purified enzyme was used for characterization of the enzyme action. The hydrolysis products were monitored by both HPLC and high-performance ion chromatography analysis that enable the kinetic analysis of the cyclomaltodextrin (CD)-degrading reaction. Analysis of the kinetics of cyclomaltodextrin hydrolysis by CDase I-5 indicated that ring-opening of the cyclomaltodextrin was the major limiting step and that CDase I-5 preferentially degraded the linear maltodextrin chain by removing the maltose unit. The substrate binding affinity of the enzyme was almost same for those of cyclomaltodextrins while the rate of ring-opening was the fastest for cyclomaltoheptaose. Acarbose and methyl 6-amino-6-deoxy-alpha-d-glucopyranoside were relatively strong competitive inhibitors with K(i) values of 1.24 x 10(-3) and 8.44 x 10(-1) mM, respectively. Both inhibitors are likely to inhibit the ring-opening step of the CD degradation reaction.

L16 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:614223 CAPLUS
DOCUMENT NUMBER: 143:208627
TITLE: Process for preparing high purity acarbose
INVENTOR(S): Jiang, Linyu; Lin, Lingtao
PATENT ASSIGNEE(S): Sanda Membrane Science and Technology Xiamen Co., Ltd., Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, No pp. given
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1554662	A	20041215	CN 2003-10117484	20031219
PRIORITY APPLN. INFO.:			CN 2003-10117484	20031219

AB The present invention discloses the preparation process of high purity acarbose. The fermented liquid with acarbose is first separated in the first separation system to eliminate mycelium, soluble protein, culture medium and partial pigment to obtain clear acarbose filtrate; the clear acarbose filtrate is then concentrated, decolorized and desalted to eliminate partial monosaccharide, inorg. salt and other small mol. impurity to obtain clear acarbose concentrated solution; and finally through chromatog. resin adsorption, gradient acid pickling, nano filtering film concentration and spray drying, high purity acarbose product is obtained. The present invention has shortened technol. path, high total acarbose yield and high product purity.

L16 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:474833 CAPLUS
DOCUMENT NUMBER: 143:6386
TITLE: Purification process for manufacturing a high purity acarbose
INVENTOR(S): Lin, Chung-Liang; Huang, Tung-Li; Chen, Jeen-Kuan; Wu, Chi-Sheng
PATENT ASSIGNEE(S): Taiwan
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005118686	A1	20050602	US 2004-790069	20040302
JP 2005160463	A	20050623	JP 2004-1337	20040106
PRIORITY APPLN. INFO.:			TW 2003-92133913 A	20031202

AB A purification process for manufacturing a high pure acarbose relates to a process for preparing high pure acarbose from acarbose-containing fermentation broth. The acarbose was purified through steps of alc. precipitation, a strongly acidic cation exchanger chromatog. and an immobilized enzyme affinity chromatog. Acarbose is generally applied in treating diabetes.

L16 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:928233 CAPLUS
DOCUMENT NUMBER: 138:3755

TITLE: Method for purification of acarbose
INVENTOR(S): Keri, Vilmos; Deak, Lajos
PATENT ASSIGNEE(S): Hung.
SOURCE: U.S. Pat. Appl. Publ., 7 pp., Cont.-in-part of U. S. Ser. No. 924,271.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002183262	A1	20021205	US 2002-60831	20020130
US 2002111320	A1	20020815	US 2001-924271	20010807
WO 2003014135	A1	20030220	WO 2002-US2705	20020130

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2000-223492P P 20000807
US 2001-924271 A2 20010807

AB The present invention relates to a novel process for the preparation of acarbose. Said process comprises the steps of: acidifying a fermentation broth containing an acarbose; removing particulates from the fermentation broth; adsorbing the acarbose on a cation-exchanger in the presence of an anion of a weak acid; eluting the acarbose from the cation-exchanger with at least one of a sodium chloride solution and a salt solution; precipitating the acarbose with a solvent; and recovering the precipitated acarbose.

L16 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:123021 CAPLUS
DOCUMENT NUMBER: 136:182542
TITLE: Method for purification of acarbose
INVENTOR(S): Keri, Vilmos; Deak, Lajos
PATENT ASSIGNEE(S): Biogal Gyogyszergyar Rt., Hung.; Teva Pharmaceuticals USA, Inc.
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002012256	A1	20020214	WO 2001-US24729	20010807

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2001084741 A5 20020218 AU 2001-84741 20010807
EP 1309601 A1 20030514 EP 2001-963821 20010807
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
PRIORITY APPLN. INFO.: US 2000-223492P P 20000807
WO 2001-US24729 W 20010807

AB The present invention relates to a novel process for the preparation of acarbose. Said process comprises the steps of: acidifying a fermentation broth containing an acarbose; removing particulates from the fermentation broth; adsorbing the acarbose on a cation-exchanger in the presence of an anion of a weak acid; eluting the acarbose from the cation-exchanger with at least one of hydrochloric acid and the weak acid; precipitating the acarbose with a solvent; and separating the acarbose crystals.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 5 OF 6 MEDLINE on STN
ACCESSION NUMBER: 2002730321 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12493227
TITLE: Synthesis of acarbose analogues by transglycosylation reactions of Leuconostoc mesenteroides B-512FMC and B-742CB dextransucrases.
AUTHOR: Yoon Seung-Heon; Robyt John F
CORPORATE SOURCE: Laboratory of Carbohydrate Chemistry and Enzymology, 4252 Molecular Biology BLDG, Iowa State University, Ames 50011, USA.
SOURCE: Carbohydrate research, (2002 Nov 29) Vol. 337, No. 24, pp. 2427-35.
Journal code: 0043535. ISSN: 0008-6215.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200307
ENTRY DATE: Entered STN: 21 Dec 2002
Last Updated on STN: 10 Jul 2003
Entered Medline: 9 Jul 2003

AB Two new acarbose analogues were synthesized by the reaction of acarbose with sucrose and dextransucrases from Leuconostoc mesenteroides B-512FMC and B-742CB. The major products for each reaction were subjected to yeast fermentation, and then separated and purified by Bio-Gel P2 gel permeation chromatography and descending paper chromatography. The structures of the products were determined by one- and two-dimensional 1H and 13C NMR spectroscopy and by matrix-assisted laser desorption ionization-time of flight mass spectrometry (MALDI-TOF MS). B-512FMC-dextransucrase produced one major acarbose product, 2(I)-alpha-D-glucopyranosylacarbose and B-742CB-dextransucrase produced two major acarbose products, 2(I)-alpha-D-glucopyranosylacarbose and 3(IV)-alpha-D-glucopyranosylacarbose.

L16 ANSWER 6 OF 6 MEDLINE on STN
ACCESSION NUMBER: 90121329 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2610716
TITLE: Radiosynthesis of [14C]acarbose.
AUTHOR: Maul W; Muller L; Pfitzner J; Rauenbusch E; Schutt H
CORPORATE SOURCE: Pharma Research Center, Bayer AG, Wuppertal, Fed. Rep. of Germany.
SOURCE: Arzneimittel-Forschung, (1989 Oct) Vol. 39, No. 10, pp. 1251-3.
Journal code: 0372660. ISSN: 0004-4172.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199002
ENTRY DATE: Entered STN: 28 Mar 1990
Last Updated on STN: 3 Mar 2000
Entered Medline: 21 Feb 1990

AB Acarbose (O-4,6-dideoxy-4-[[(1S, 4R, 5S, 6S)-4,5,6-trihydroxy-3-(hydroxymethyl)-2-cyclohexen-1-yl]amino]-a-D-glucopyranosyl-(1----4)-O-a-D- glucopyranosyl-(1----4)-4-glucopyranose, Bay g 5421), an a-glucosidase inhibitor from Actinoplanes, has been developed for the treatment of diabetes mellitus. To investigate the pharmacokinetics and the biotransformation, 14C-labelled acarbose ([14C]Bay g 5421) was required. About 37 GBq (1 Ci) D-[U-14C]glucose was used as a precursor to obtain [14C]acarbose with a radiochemical yield of between 1.58 and 2.56%. For fermentation purposes resting cells of the Actinoplanes mutant SN 1667/47 were used under cometabolism conditions with a 10-fold excess of maltose. The specific radioactivities achieved in individual preparations were 7.77 MBq/mg (210 microCi/mg), 8.03 MBq/mg (217 microCi/mg), and 9.14 MBq/mg (247 microCi/mg), with a radiochemical purity of greater than 98% in each case. By hydrolysis and subsequent investigation of the hydrolysis products it was shown that [14C]carbon atoms originating from the radioactive glucose are present only in the core and not in the maltose unit of [14C] acarbose.

L20 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1102375 CAPLUS
TITLE: Fermented wine prepared from fermentation broth of ganoderma mycelium, lycium barbarum fruit, and tomato juice
INVENTOR(S): Du, Xingang; Jin, Fan; Wang, Dexiang
PATENT ASSIGNEE(S): Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1712510	A	20051228	CN 2004-10049656	20040623
PRIORITY APPLN. INFO.:			CN 2004-10049656	20040623

AB The title fermented wine is made by preparing tomato juice; blending 15% of fermentation broth of ganoderma mycelium, 85% of tomato juice, and 3% of Lycium barbarum fruit; grinding; adding sucrose until sugar content is 22%; inoculating 2% of yeast powder and performing alcohol fermentation under 25°C; filtering the fermentation broth to remove residues; concocting with ascorbic acid and potassium sorbate; aging; precipitating and clarifying; filtering for sterilization; and bottling. The fermented wine has good appearance and flavor and is rich in bioactive substances such as ganoderan, Lycium barbarum polysaccharide, superoxide dismutase (SOD), and lycopene; and it has endocrine regulating, immunity enhancing, antioxidative and tumor inhibiting effects.

L20 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1994:603402 CAPLUS
DOCUMENT NUMBER: 121:203402
TITLE: Alcohol precipitation of xanthan gum from pure solutions and fermentation broths
AUTHOR(S): Flahive, J. J., III; Foufopoulos, A.; Etzel, M. R.
CORPORATE SOURCE: Dep. Food Sci. Chem. Eng., Univ. Wisconsin, Madison, WI, USA
SOURCE: Separation Science and Technology (1994), 29(13), 1673-87
CODEN: SSTEDS; ISSN: 0149-6395
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Xanthan gum was precipitated from pure solns. and fermentation broths using either ethanol, isopropanol, or tert-butanol. The compns. of the precipitate and supernatant phases were determined as a function of alc. concentration and used to construct binodal solubility curves with tie lines. Xanthan did not precipitate at bulk-mixture alc. concns. below 37.5% (wt) for ethanol, 35% for isopropanol, and 31% for tert-butanol. As the alc. concentration increased beyond this point, the ppts. first were heavy gels with low xanthan concns. At higher alc. concns., the ppts. were compact and fibrous. The maximum xanthan concentration in the precipitate was 14.5% at 60% ethanol, 23.5% at 50% isopropanol, and 33.5% at 40% tert-butanol in the pure solution precipitation expts. At alc. concns. beyond 75%, the ppts. were brittle and needle-like, which made separation from the

supernatant difficult. The results for the fermentation broth expts. were very similar to those of the pure solution expts. Thus, precipitation using ethanol required the highest alc. usage and resulted in the lowest xanthan concentration in the precipitate Conversely, tert-butanol required the least alc. for precipitation and formed the ppts. highest in xanthan concentration

L20 ANSWER 3 OF 3 MEDLINE on STN
ACCESSION NUMBER: 95146419 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7531193
TITLE: Cepacidine A, a novel antifungal antibiotic produced by Pseudomonas cepacia. I. Taxonomy, production, isolation and biological activity.
AUTHOR: Lee C H; Kim S; Hyun B; Suh J W; Yon C; Kim C; Lim Y; Kim C
CORPORATE SOURCE: R&D Center, Cheil Foods & Chemicals Inc., Kyunggi-Do, South Korea.
SOURCE: The Journal of antibiotics, (1994 Dec) Vol. 47, No. 12, pp. 1402-5.
Journal code: 0151115. ISSN: 0021-8820.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199503
ENTRY DATE: Entered STN: 16 Mar 1995
Last Updated on STN: 29 Jan 1996
Entered Medline: 6 Mar 1995

AB Cepacidine A is a potent antifungal antibiotic produced by Pseudomonas cepacia AF 2001. The compound was isolated from the fermentation broth with 1 vol isopropyl alcohol, followed by the collection of the precipitation formed upon concentration of the extract. Purification was effected by chromatography on Diaion HP-20, alumina and reversed phase C18 followed by TLC on silica gel. These techniques afforded the two closely related compounds, cepacidine A1 and cepacidine A2. A mixture of these two compounds called capacidine A, showed high in vitro antifungal activity against the various animal and plant pathogenic fungi. The activity was diminished by the presence of serum. No antibacterial activity was demonstrable.

L21 ANSWER 8 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2002480138 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12242633
TITLE: Ethanol production from corn cob hydrolysates by Escherichia coli KO11.
AUTHOR: de Carvalho Lima K G; Takahashi C M; Alterthum F
CORPORATE SOURCE: Departamento de Microbiologia, Instituto de Ciencias Biomedicas, Universidade de Sao Paulo, Avenida Professor Lineu Prestes, 1374, Cidade Universitaria, Sao Paulo, SP CEP 05508-900, Brazil.
SOURCE: Journal of industrial microbiology & biotechnology, (2002 Sep) Vol. 29, No. 3, pp. 124-8.
Journal code: 9705544. ISSN: 1367-5435.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200301
ENTRY DATE: Entered STN: 21 Sep 2002
Last Updated on STN: 23 Jan 2003
Entered Medline: 22 Jan 2003

AB Corn cob hydrolysates, with xylose as the dominant sugar, were fermented to ethanol by recombinant Escherichia coli KO11. When inoculum was grown on LB medium containing glucose, fermentation of the hydrolysate was completed in 163 h and ethanol yield was 0.50 g ethanol/g sugar. When inoculum was grown on xylose, ethanol yield dropped, but fermentation was faster (113 h). Hydrolysate containing 72.0 g/l xylose and supplemented with 20.0 g/l rice bran was readily fermented, producing 36.0 g/l ethanol within 70 h. Maximum ethanol concentrations were not higher for fermentations using higher cellular concentration inocula. A simulation of an industrial process integrating pentose fermentation by E. coli and hexose fermentation by yeast was carried out. At the first step, E. coli fermented the hydrolysate containing 85.0 g/l xylose, producing 40.0 g/l ethanol in 94 h. Baker's yeast and sucrose (150.0 g/l) were then added to the spent fermentation broth. After 8 h of yeast fermentation, the ethanol concentration reached 104.0 g/l. This two-stage fermentation can render the bioconversion of lignocellulose to ethanol more attractive due to increased final alcohol concentration.

L21 ANSWER 9 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2001548193 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11594400
TITLE: Separation of endo-polygalacturonase using aqueous two-phase partitioning.
AUTHOR: Wu Y T; Pereira M; Venancio A; Teixeira J
CORPORATE SOURCE: Centro de Engenharia Biologica-IBQF, Universidade do Minho, Braga, Portugal.
SOURCE: Journal of chromatography. A, (2001 Sep 21) Vol. 929, No. 1-2, pp. 23-9.
Journal code: 9318488. ISSN: 0021-9673.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200202
ENTRY DATE: Entered STN: 15 Oct 2001
Last Updated on STN: 23 Feb 2002
Entered Medline: 22 Feb 2002

AB The partitioning of endo-polygalacturonase (endo-PG) in polyethylene glycol (PEG)-polyvinyl alcohol (PVA10000) and PEG-hydroxypropyl

starch (Reppal PES100) aqueous two-phase systems was studied, and revealed the possibility of using aqueous two-phase extraction to purify and concentrate endo-PG from its clarified fermentation broth. For the PEG8000-PVA10000 system, endo-PG presented in the fermentation broth (at concentration that is more than 40% of total protein) mainly dominates in the top phase with a partitioning coefficient of 6, while total protein concentrates in the bottom phase. A separation scheme consisting of two consecutive aqueous two-phase extraction steps was proposed: a first extraction in polyethylene glycol (PEG8000)-polyvinyl alcohol system, followed by a second extraction in PEG8000-(NH4)2SO4 system. This allowed the separation of endo-PG from polymer and the recycling of PEG polymer, since endo-PG was very strongly partitioned into the bottom phase of the PEG8000-(NH4)2SO4 system. Laboratory-scale experiments were performed to test the efficiency of this scheme. It was found that enzyme recovery was up to 91% with a total purification factor of about 1.9 and a concentration factor of more than 5. About 90% of the total PEG added into the systems can be recovered, and no reduction was obtained in the purification factor using recycled PEG.

L21 ANSWER 10 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2000485017 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10906239
TITLE: Determination of carbohydrates, sugar alcohols, and glycols in cell cultures and fermentation broths using high-performance anion-exchange chromatography with pulsed amperometric detection.
AUTHOR: Hanko V P; Rohrer J S
CORPORATE SOURCE: Dionex Corporation, 500 Mercury Drive, Sunnyvale, California, 94088-3603, USA.. val_hanko@dionex.com
SOURCE: Analytical biochemistry, (2000 Aug 1) Vol. 283, No. 2, pp. 192-9.
Journal code: 0370535. ISSN: 0003-2697.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200010
ENTRY DATE: Entered STN: 19 Oct 2000
Last Updated on STN: 19 Oct 2000
Entered Medline: 6 Oct 2000

AB Cell cultures and fermentation broths are complex mixtures of organic and inorganic compounds. Many of these compounds are synthesized or metabolized by microorganisms, and their concentrations can impact the yields of desired products. Carbohydrates serve as carbon sources for many microorganisms, while sugar alcohols (alditols), glycols (glycerol), and alcohols (methanol and ethanol) are metabolic products. We used high-performance anion-exchange chromatography with pulsed amperometric detection (HPAE-PAD) to simultaneously analyze for carbohydrates, alditols, and glycerol in growing yeast (Saccharomyces cerevisiae) cultures and their final fermentation broths. Both cultures were grown on complex undefined media, aliquots centrifuged to remove particulates, and the supernatants diluted and directly injected for analysis. Pulsed amperometry allowed a direct detection of the carbohydrates, alditols, and glycols present in the cultures and fermentation broths with very little interference from other matrix components. The broad linear range of three to four orders of magnitude allowed samples to be analyzed without multiple dilutions. Peak area RSDs were 2-7% for 2, 3-butanediol, ethanol, glycerol, erythritol, rhamnose, arabitol, sorbitol, galactitol, mannitol, arabinose, glucose, galactose, lactose, ribose, raffinose, and maltose spiked into a heat-inactivated yeast culture broth supernatant that was analyzed repetitively for 48 h. This method is useful for directly monitoring culture changes during fermentation. The

carbohydrates in yeast cultures were monitored over 1 day. A yeast culture with medium consisting primarily of glucose and trace levels of trehalose and arabinose showed a drop in sugar concentration over time and an increase in glycerol. Yeast growing on a modified culture medium consisting of multiple carbohydrates and alditols showed preference for specific carbon sources and showed the ability to regulate pathways leading to catalysis of alternative carbon sources.

L21 ANSWER 11 OF 15 MEDLINE on STN
ACCESSION NUMBER: 1999381223 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10451916
TITLE: An optical biosensor for monitoring recombinant proteins in process media.
AUTHOR: Disley D M; Morrill P R; Sproule K; Lowe C R
CORPORATE SOURCE: Institute of Biotechnology, University of Cambridge, UK.. admin@biotech.cam.ac.uk
SOURCE: Biosensors & bioelectronics, (1999 May 31) Vol. 14, No. 5, pp. 481-93.
Journal code: 9001289. ISSN: 0956-5663.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199909
ENTRY DATE: Entered STN: 13 Sep 1999
Last Updated on STN: 13 Sep 1999
Entered Medline: 2 Sep 1999

AB This paper describes the construction of a sensor for the direct monitoring of a recombinant protein, the human insulin analogue (MI3). The surface plasmon resonance (SPR) sensor incorporates an immobilised, sterilisable affinity-ligand that has been designed to bind to MI3. In practice, gold SPR devices were fabricated with; a 2D assembly of ethanethiol-modified ligand, a 2D mixed-assembly of ethanethiol-modified ligand and mercaptoethanol, a 3D coating of ligand-modified terminal-thiolated poly(vinyl)alcohol (PVA) or a 3D hydrogel of dextran coupled to a self-assembled monolayer (SAM) of mercaptohexaneundecanl-ol. Routine measurement of the concentration MI3 in the concentration range 1-100 mg/l in pilot-scale samples of crude fermentation broth have been achieved with high sensitivity levels and a high signal-to-noise ratio. Analysis can be achieved within < 10 min with the active surface being regenerable for at least 60 cycles over a 6 month period. The coupling of a robust, sterilisable and highly-selective sensor-coating with suitable transducer technologies promises to deliver sensors that are capable of direct in situ monitoring of biopharmaceuticals in industrial bioprocesses.

L21 ANSWER 12 OF 15 MEDLINE on STN
ACCESSION NUMBER: 96017677 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7592020
TITLE: AL072, a novel anti-Legionella antibiotic produced by Streptomyces sp.
AUTHOR: Yon C; Suh J W; Chang J H; Lim Y; Lee C H; Lee Y S; Lee Y W
CORPORATE SOURCE: R & D Center, Cheil Foods & Chemicals Inc., Kyonggi-Do, Korea.
SOURCE: The Journal of antibiotics, (1995 Aug) Vol. 48, No. 8, pp. 773-9.
Journal code: 0151115. ISSN: 0021-8820.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English

FILE SEGMENT: Priority Journals
ENTRY MONTH: 199512
ENTRY DATE: Entered STN: 24 Jan 1996
Last Updated on STN: 6 Feb 1998
Entered Medline: 12 Dec 1995

AB AL072 is a potent anti-Legionella antibiotic produced by Streptomyces strain AL91. The compound was isolated from the fermentation broth with 1 volume of isopropyl alcohol, followed by an ethyl acetate extraction and subsequent concentration under reduced pressure. Purification was performed on an octadecyl silica gel column followed by preparative HPLC. AL072 purified as mentioned above showed extremely specific activity only towards Legionella pneumophila. No antibacterial activity against any other bacteria tested was demonstrable. Its molecular weight was determined by FAB-MS (m/z 648) and the compound was identified as a novel 1,3-diacyl glycerol with the molecular formula C41H76O5. One of the two acyl groups is linoleyl and the other is 3,5-dimethyl octadecanoyl.

L21 ANSWER 13 OF 15 MEDLINE on STN
ACCESSION NUMBER: 95146419 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7531193
TITLE: Cepacidine A, a novel antifungal antibiotic produced by Pseudomonas cepacia. I. Taxonomy, production, isolation and biological activity.
AUTHOR: Lee C H; Kim S; Hyun B; Suh J W; Yon C; Kim C; Lim Y; Kim C
CORPORATE SOURCE: R&D Center, Cheil Foods & Chemicals Inc., Kyunggi-Do, South Korea.
SOURCE: The Journal of antibiotics, (1994 Dec) Vol. 47, No. 12, pp. 1402-5.
Journal code: 0151115. ISSN: 0021-8820.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199503
ENTRY DATE: Entered STN: 16 Mar 1995
Last Updated on STN: 29 Jan 1996
Entered Medline: 6 Mar 1995

AB Cepacidine A is a potent antifungal antibiotic produced by Pseudomonas cepacia AF 2001. The compound was isolated from the fermentation broth with 1 vol isopropyl alcohol, followed by the collection of the precipitation formed upon concentration of the extract. Purification was effected by chromatography on Diaion HP-20, alumina and reversed phase C18 followed by TLC on silica gel. These techniques afforded the two closely related compounds, cepacidine A1 and cepacidine A2. A mixture of these two compounds called capacidine A, showed high in vitro antifungal activity against the various animal and plant pathogenic fungi. The activity was diminished by the presence of serum. No antibacterial activity was demonstrable.

L21 ANSWER 14 OF 15 MEDLINE on STN
ACCESSION NUMBER: 88110801 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3322702
TITLE: Factors affecting the production of amphotericin A.
AUTHOR: Liu Y T; Wu W L; Chiang M H; Hu S J
CORPORATE SOURCE: Institute of Microbiology, National Defense Medical Center, Taipei, ROC.
SOURCE: Zhonghua Minguo wei sheng wu ji mian yi xue za zhi = Chinese journal of microbiology and immunology, (1987 Aug) Vol. 20, No. 3, pp. 247-56.
Journal code: 8008067. ISSN: 0253-2662.
PUB. COUNTRY: TAIWAN: Taiwan, Province of China
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)

(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198803
ENTRY DATE: Entered STN: 5 Mar 1990
Last Updated on STN: 5 Mar 1990
Entered Medline: 10 Mar 1988

AB Factors affecting amphotericin A synthesis of Streptomyces nodosus, NDMC-034 were studied. Iron, magnesium and manganese were found to stimulate amphotericin A synthesis at concentrations ranging from 10-100 microM. The optimum inoculum size, and the pH of production medium before sterilization for producing amphotericin A, were found to be near 10% (v/v) and pH 7.8, respectively. Carrying out fermentation in a complex medium using pharmamedia as nitrogen source resulted in an amphotericin A yield of up to 3.4 g/liter. A novel isolation and purification process for amphotericin A from the fermentation broth was developed, using an extracting isopropyl alcohol and methanolic solution containing 2% CaCl2. Amphotericin A exhibits a much lower acute toxicity in mice than amphotericin B.

L21 ANSWER 15 OF 15 MEDLINE on STN
ACCESSION NUMBER: 77258181 MEDLINE
DOCUMENT NUMBER: PubMed ID: 19818
TITLE: [Use of chemical disinfectants in alcoholic fermentation of must of sugar cane molasses].
Emprego de desinfetante quimico em fermentacao alcoolica de mosto de malaco de cana.
AUTHOR: Brazzach M L; Aquarone E; Colombo A J
SOURCE: Revista de farmacia e bioquimica da Universidade de Sao Paulo, (1976 Jan-Jun) Vol. 14, No. 1, pp. 1-21.
Journal code: 1272000. ISSN: 0370-4726.
PUB. COUNTRY: Brazil
DOCUMENT TYPE: (ENGLISH ABSTRACT)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Portuguese
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197710
ENTRY DATE: Entered STN: 14 Mar 1990
Last Updated on STN: 6 Feb 1995
Entered Medline: 31 Oct 1977

AB The use of hexaclorophene as desinfectant for alcoholic fermentation was studied. Its effect upon alcoholic yield and acidity levels of "beers" and "spirit" was observed. The optimal concentration of hexaclorophene in fermentation broth was found to be 4%.

L21 ANSWER 1 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:286511 CAPLUS
TITLE: Method of brewing cherokee rose fruit wine
INVENTOR(S): Wei, Guozhi
PATENT ASSIGNEE(S): Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1743446	A	20060308	CN 2005-10037554	20050928
PRIORITY APPLN. INFO.:			CN 2005-10037554	20050928

AB The title method comprises crushing Cherokee rose fruits, treating with papain and pectinase to obtain a nutrient fluid of carbohydrates, continuously extracting and concentrating, inoculating fruit wine yeast for deep submerged fermentation under 18-21°C to obtain a fermentation broth having alcohol content of 12-13%, ageing for 2-3 months, concocting, filtering, and packaging.

L21 ANSWER 2 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1985:470082 CAPLUS
DOCUMENT NUMBER: 103:70082
TITLE: Measuring the alcohol concentration in an acetic acid fermentation broth
INVENTOR(S): Yamada, Mikio; Mizuno, Masahiro; Tsukamoto, Yoshinori; Yamada, Koki
PATENT ASSIGNEE(S): Nakano Vinegar Co., Ltd., Japan
SOURCE: Ger. Offen., 21 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3441523	A1	19850530	DE 1984-3441523	19841114
DE 3441523	C2	19880225		
JP 60110280	A	19850615	JP 1983-216218	19831118
JP 05002306	B	19930112		
US 4656140	A	19870407	US 1984-669761	19841108
PRIORITY APPLN. INFO.:			JP 1983-216218 A	19831118

AB A sample containing the volatile components of a HOAc [64-19-7] fermentation broth is passed, at 80-250°, through a column packed with a HOAc-absorbing material (CaO, NaOH, or soda lime). Following the removal of HOac, EtOH [64-17-5] is determined in the sample using a semiconductor gas sensor or flame-ionization detector by conversion into an elec. signal. Thus, EtOH was determined in the HOAc fermentation broth of a semicontinuous culture using a semiconductor sensor. The results agreed with those shown by a standard method.

L21 ANSWER 3 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2006604693 IN-PROCESS
DOCUMENT NUMBER: PubMed ID: 17037060
TITLE: Screening of a low alcohol dehydrogenase activity mutant of rhizopus oryzae and the regulation of Zn2+ and Mg2+.
AUTHOR: Pan Li-jun; Fu Ping; Zheng Zhi; Luo Shui-zhong; Jiang

Shao-tong
CORPORATE SOURCE: School of Biotechnology and Food Engineering, Hefei University of Technology, Hefei 230009, China.. panlijun@tom.com
SOURCE: Wei sheng wu xue bao = Acta microbiologica Sinica, (2006 Aug) Vol. 46, No. 4, pp. 586-90.
Journal code: 21610860R. ISSN: 0001-6209.
PUB. COUNTRY: China
DOCUMENT TYPE: (ENGLISH ABSTRACT)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Chinese
FILE SEGMENT: NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 14 Oct 2006
Last Updated on STN: 12 Dec 2006

AB Ethanol is the main by-product in the fermentation broth of Rhizopus oryzae As3.3461 for the production of high-optical purity L-lactic acid. Alcohol Dehydrogenase (ADH) is the branch pathway enzyme that catalyzes the transformation of ethanol from pyruvate in Rhizopus oryzae, which decreases the conversion rate of glucose to L-lactic acid. Thus, screening the mutants with lower ADH activity may increase lactate production dramatically. In present study, Rhizopus oryzae As3.3461 was mutated with N-methyl-N'-nitro-N-nitrosoguanidine (NTG), and 21 mutants which showed lower ADH activity were isolated with selective medium of Yeast-Peptone-Dextrose (YPD) containing 0.6% allyl alcohol (V/V). Compared with other mutants, the 12th mutant strain (named as HBF-12) shows the highest conversion rate of L-lactic acid. By contrast with Rhizopus oryzae As3.3461, the parent strain, the ethanol production and the ADH activity of HBF-12 decrease 73.6% and 76%, respectively. Whereas, the L-lactic acid production and the LDH activity of HBF-12 increase 41.2% and 19.6% than those of the parent strain, respectively. The activities of ADH and LDH of HBF-12 were regulated by Zn2+ and Mg2+, but showed opposite effects. Added with Zn2+ to the concentration of 0.01% improves the ADH activity dramatically, but inhibits the activity of LDH. By contraries, added with Mg2+ improves the LDH activity markedly, but inhibits the ADH activity slightly. In fermentation experiment, the addition of Zn2+ and Mg2+ show different effects on the accumulation of ethanol, L-lactic acid and the biomass in mutant HBF-12. When improve the concentration of Zn2+, the accumulation of L-lactic acid and the biomass show the decreased trend, but the production of ethanol show positive effect. With the improvement of the concentration of Mg2+, the production of lactic acid and biomass increase markedly, but no effect on the production of ethanol. When ferment under the concentrations of Zn2+ 0.01% and Mg2+ 0.04% in fermentation medium, the lactate production of HBF-12 reached the highest level, 96.21 g/L.

L21 ANSWER 4 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2005003736 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15630189
TITLE: Isolation and identification of lactic acid bacteria with effect of immune protection to Eschericia coli in mice.
AUTHOR: Ishida-Fujii Keiko; Goto Shingo; Kuboki Hiroshi; Hirano Shin-ichi; Sakamoto Michiko; Sato Michikatsu
CORPORATE SOURCE: R & D Center, Alcohol Enterprise Head Office, New Energy and Industrial Technology Development Organization, 5-1, Inagehigashi 4-chome, Inage-ku, Chiba-shi, Chiba, 263-0031, Japan.. fujii@jp-alcohol.com
SOURCE: BioFactors (Oxford, England), (2004) Vol. 21, No. 1-4, pp. 155-8.
Journal code: 8807441. ISSN: 0951-6433.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals

ENTRY MONTH: 200504
ENTRY DATE: Entered STN: 5 Jan 2005
Last Updated on STN: 19 Apr 2005
Entered Medline: 18 Apr 2005

AB Lactic acid bacteria were isolated from an alcohol fermentation broth, and the activity as a probiotic was examined using pathogenic E. coli. Thirty-six strains exhibiting good growth were isolated in the medium of concentrated mush which was a residue resulted in the alcohol distillation process. One of these strains, Lactobacillus paracasei subsp. paracasei I-5, could be grown in the medium containing 8 vol% ethanol and at 45 degrees C. The characteristics were different from the type strain, L. paracasei subsp. paracasei NBRC 15889. L. paracasei I-5 showed an excellent growth in the concentrated mush, which just diluted two-fold and adjusted the pH. ICR mice were fed with a standard germ-free feed (CMF) and the strain I-5 (7 x 10(9) cells/day) was orally administrated for 11 days prior to the intraperitoneal challenge with pathogenic E. coli Juhl. After the challenge, mice administrated the strain I-5 exhibited a high survival rate and survival extension days ($p < 0.01$) compared with the control. The results suggested that the strain might enhance the animal resistance against microbial pathogens. Neonatal diarrhea caused by E. coli is a serious disease in calf breeding. The strain might be practically valuable to prevent diarrhea in calves.

L21 ANSWER 5 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2003574713 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14654042
TITLE: Determination of amino acids in cell culture and fermentation broth media using anion-exchange chromatography with integrated pulsed amperometric detection.
AUTHOR: Hanko Valoran P; Rohrer Jeffrey S
CORPORATE SOURCE: Dionex Corp, 500 Mercury Drive, Sunnyvale, CA 94088-3603, USA.. val.hanko@dionex.com
SOURCE: Analytical biochemistry, (2004 Jan 1) Vol. 324, No. 1, pp. 29-38.
Journal code: 0370535. ISSN: 0003-2697.
PUB. COUNTRY: United States
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200410
ENTRY DATE: Entered STN: 16 Dec 2003
Last Updated on STN: 13 Oct 2004
Entered Medline: 12 Oct 2004

AB Cell culture and fermentation broth media are used in the manufacture of biotherapeutics and many other biological materials. Characterizing the amino acid composition in cell culture and fermentation broth media is important because deficiencies in these nutrients can reduce desired yields or alter final product quality. Anion-exchange (AE) chromatography using sodium hydroxide (NaOH) and sodium acetate gradients, coupled with integrated pulsed amperometric detection (IPAD), determines amino acids without sample derivatization. AE-IPAD also detects carbohydrates, glycols, and sugar alcohols. The presence of these compounds, often at high concentrations in cell culture and fermentation broth media, can complicate amino acid determinations. To determine whether these samples can be analyzed without sample preparation, we studied the effects of altering and extending the initial NaOH eluent concentration on the retention of 42 different carbohydrates and related compounds, 30 amino acids and related compounds, and 3 additional compounds. We found that carbohydrate retention is impacted in a manner different from that of amino acid retention by a

change in [NaOH]. We used this selectivity difference to design amino acid determinations of diluted cell culture and fermentation broth media, including Bacto yeast extract-peptone-dextrose (yeast culture medium) broth, Luria-Bertani (bacterial culture medium) broth, and minimal essential medium and serum-free protein-free hybridoma medium (mammalian cell culture media). These media were selected as representatives for both prokaryotic and eukaryotic culture systems capable of challenging the analytical technique presented in this paper. Glucose up to 10mM (0.2%, w/w) did not interfere with the chromatography, or decrease recovery greater than 20%, for the common amino acids arginine, lysine, alanine, threonine, glycine, valine, serine, proline, isoleucine, leucine, methionine, histidine, phenylalanine, glutamate, aspartate, cystine, and tyrosine.

L21 ANSWER 6 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2003260855 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12788746
TITLE: 1,8-dihydroxynaphthalene (DHN)-melanin biosynthesis inhibitors increase erythritol production in Torula corallina, and DHN-melanin inhibits erythrose reductase.
AUTHOR: Lee Jung-Kul; Jung Hyung-Moo; Kim Sang-Yong
CORPORATE SOURCE: BioNgene Co., Ltd., Chongro-Ku, Seoul 110-521, Korea.. jkrhee@biongene.com
SOURCE: Applied and environmental microbiology, (2003 Jun) Vol. 69, No. 6, pp. 3427-34.
Journal code: 7605801. ISSN: 0099-2240.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200310
ENTRY DATE: Entered STN: 6 Jun 2003
Last Updated on STN: 2 Oct 2003
Entered Medline: 1 Oct 2003

AB The yeast Torula corallina is a strong erythritol producer that is used in the industrial production of erythritol. However, melanin accumulation during culture represents a serious problem for the purification of erythritol from the fermentation broth. Melanin biosynthesis inhibitors such as 3,4-dihydroxyphenylalanine and 1,8-dihydroxynaphthalene (DHN)-melanin inhibitors were added to the T. corallina cultures. Only the DHN-melanin inhibitors showed an effect on melanin production, which suggests that the melanin formed during the culturing of T. corallina is derived from DHN. This finding was confirmed by the detection of a shunt product of the pentaketide pathway, flaviolin, and elemental analysis. Among the DHN-melanin inhibitors, tricyclazole was the most effective. Supplementation with tricyclazole enhanced the production of erythritol while significantly inhibiting the production of DHN-melanin and DHN-melanin biosynthetic enzymes, such as trihydroxynaphthalene reductase. The erythrose reductase from T. corallina was purified to homogeneity by ion-exchange and affinity chromatography. Purified erythrose reductase was significantly inhibited in vitro in a noncompetitive manner by elevated levels of DHN-melanin. In contrast, the level of erythrose reductase activity was unaffected by increasing concentrations of tricyclazole. These results suggest that supplemental tricyclazole reduces the production of DHN-melanin, which may lead to a reduction in the inhibition of erythrose reductase and a higher yield of erythritol. This is the first report to demonstrate that melanin biosynthesis inhibitors increase the production of a sugar alcohol in T. corallina.

L21 ANSWER 7 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2003058412 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12569628

TITLE: Extractive fermentation for butyric acid production from glucose by Clostridium tyrobutyricum.

AUTHOR: Wu Zetang; Yang Shang-Tian
CORPORATE SOURCE: Department of Chemical Engineering, The Ohio State University, 140 West 19th Avenue, Columbus, Ohio, USA.

SOURCE: Biotechnology and bioengineering, (2003 Apr 5) Vol. 82, No. 1, pp. 93-102.
Journal code: 7502021. ISSN: 0006-3592.
PUB. COUNTRY: United States
DOCUMENT TYPE: (COMPARATIVE STUDY)
(EVALUATION STUDIES)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
(VALIDATION STUDIES)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200309
ENTRY DATE: Entered STN: 6 Feb 2003
Last Updated on STN: 28 Sep 2003
Entered Medline: 26 Sep 2003

AB A novel extractive fermentation for butyric acid production from glucose, using immobilized cells of Clostridium tyrobutyricum in a fibrous bed bioreactor, was developed by using 10% (v/v) Alamine 336 in oleyl alcohol as the extractant contained in a hollow-fiber membrane extractor for selective removal of butyric acid from the fermentation broth. The extractant was simultaneously regenerated by stripping with NaOH in a second membrane extractor. The fermentation pH was self-regulated by a balance between acid production and removal by extraction, and was kept at approximately pH 5.5 throughout the study. Compared with conventional fermentation, extractive fermentation resulted in a much higher product concentration (>300 g/L) and product purity (91%). It also resulted in higher reactor productivity (7.37 g/L. h) and butyric acid yield (0.45 g/g). Without on-line extraction to remove the acid products, at the optimal pH of 6.0, the final butyric acid concentration was only approximately 43.4 g/L, butyric acid yield was 0.423 g/g, and reactor productivity was 6.77 g/L. h. These values were much lower at pH 5.5: 20.4 g/L, 0.38 g/g, and 5.11 g/L. h, respectively. The improved performance for extractive fermentation can be attributed to the reduced product inhibition by selective removal of butyric acid from the fermentation broth. The solvent was found to be toxic to free cells in suspension, but not harmful to cells immobilized in the fibrous bed. The process was stable and provided consistent long-term performance for the entire 2-week period of study.

L23 ANSWER 1 OF 4 MEDLINE on STN
ACCESSION NUMBER: 2006343607 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16756377
TITLE: Purification of xylitol obtained by fermentation of corncob hydrolysates.
AUTHOR: Rivas Beatriz; Torre Paolo; Dominguez Jose Manuel; Converti Attilio; Parajo Juan Carlos
CORPORATE SOURCE: Department of Chemical Engineering, Polytechnical Building, Vigo University (Campus of Ourense), As Lagoas, 32004 Ourense, Spain.
SOURCE: Journal of agricultural and food chemistry, (2006 Jun 14) Vol. 54, No. 12, pp. 4430-5.
Journal code: 0374755. ISSN: 0021-8561.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200608
ENTRY DATE: Entered STN: 8 Jun 2006
Last Updated on STN: 9 Aug 2006
Entered Medline: 8 Aug 2006

AB Hydrolysates obtained by autohydrolysis-posthydrolysis of corncobs were detoxified with charcoal, concentrated, supplemented with nutrients, and fermented with Debaryomyces hansenii. After biomass removal, the fermented media contained 0.1137 kg of nonvolatile components (NVC)/kg of liquor, which corresponded mainly to xylitol (0.6249 kg/kg of NVC) but also to minor amounts of inorganic components (measured as ashes), proteins, nonfermented sugars (xylose and arabinose), uronic acids, arabitol, and other nonvolatile components (ONVC). The media were subjected to further processing (sequential stages of adsorption, concentration, ethanol precipitation, concentration, and crystallization) to obtain food-grade xylitol. Adsorption experiments were carried out at various solid-to-liquor ratios. Under selected conditions (1 kg of charcoal/15 kg of liquors), the xylitol content increased to 0.6873 kg/kg of NVC, and almost total decoloration was achieved. The resulting liquor was concentrated by evaporation to increase its NVC content to 0.4032 kg/kg of liquor (corresponding to a xylitol concentration of 0.280 kg/kg of liquor), and ethanol was added to precipitate a part of the NVC (mainly proteins, but also uronic acids, ashes, and other nonvolatile compounds). Refined liquors (containing 0.7303 kg of xylitol/kg of NVC) were concentrated again, and ethanol was added (to reach 40-60% volume of the stream) to allow crystallization at -10 or -5 degrees C. Under selected conditions, 43.7% of xylitol contained in the initial fermentation broth was recovered in well-formed, homogeneous crystals, in which xylitol accounted for 98.9% of the total oven-dry weight. Material balances are presented for the whole processing scheme considered in this work.

L23 ANSWER 2 OF 4 MEDLINE on STN
ACCESSION NUMBER: 1998125680 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9464404
TITLE: Optimization of exopolysaccharide production by Lactobacillus delbrueckii subsp. bulgaricus RR grown in a semidefined medium.
AUTHOR: Kimmel S A; Roberts R F; Ziegler G R
CORPORATE SOURCE: Department of Food Science, Pennsylvania State University, University Park 16802, USA.
SOURCE: Applied and environmental microbiology, (1998 Feb) Vol. 64, No. 2, pp. 659-64.
Journal code: 7605801. ISSN: 0099-2240.
PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199802
ENTRY DATE: Entered STN: 6 Mar 1998
Last Updated on STN: 6 Mar 1998
Entered Medline: 26 Feb 1998

AB The optimal fermentation temperature, pH, and Bacto-casitone (Difco Laboratories, Detroit, Mich.) concentration for production of exopolysaccharide by Lactobacillus delbrueckii subsp. bulgaricus RR in a semidefined medium were determined by using response surface methods. The design consisted of 20 experiments, 15 unique combinations, and five replications. All fermentations were conducted in a fermentor with a 2.5-liter working volume and were terminated when 90% of the glucose in the medium had been consumed. The population of L. delbrueckii subsp. bulgaricus RR and exopolysaccharide content were measured at the end of each fermentation. The optimum temperature, pH, and Bacto-casitone concentration for exopolysaccharide production were 38 degrees C, 5, and 30 g/liter, respectively, with a predicted yield of 295 mg of exopolysaccharide/liter. The actual yield under these conditions was 354 mg of exopolysaccharide/liter, which was within the 95% confidence interval (217 to 374 mg of exopolysaccharide/liter). An additional experiment conducted under optimum conditions showed that exopolysaccharide production was growth associated, with a specific production at the endpoint of 101.4 mg/g of dry cells. Finally, to obtain material for further characterization, a 100-liter fermentation was conducted under optimum conditions. Twenty-nine grams of exopolysaccharide was isolated from centrifuged, ultrafiltered fermentation broth by ethanol precipitation.

L23 ANSWER 3 OF 4 MEDLINE on STN
ACCESSION NUMBER: 90130823 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2613793
TITLE: Process-scale reversed-phase high-performance liquid chromatography purification of LL-E19020 alpha, a growth promoting antibiotic produced by Streptomyces lydicus ssp. tanzanius.
AUTHOR: Williams D R; Carter G T; Pinho F; Borders D B
CORPORATE SOURCE: American Cyanamid Company, Medical Research Division, Lederle Laboratories, Pearl River, NY 10965.
SOURCE: Journal of chromatography, (1989 Dec 22) Vol. 484, pp. 381-90.
Journal code: 0427043. ISSN: 0021-9673.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199003
ENTRY DATE: Entered STN: 28 Mar 1990
Last Updated on STN: 28 Mar 1990
Entered Medline: 9 Mar 1990

AB LL-E19020 alpha is a novel antibiotic produced by fermentation of the soil microorganism Streptomyces lydicus ssp. tanzanius. The compound is highly effective in inducing increases in weight gain and feed conversion efficiency in livestock. In order to obtain kilogram quantities of the material for field trials, pilot plant scale fermentations (up to 7500 l) were carried out. The antibiotic was recovered from the fermentation broth by solvent extraction. The resultant crude extract was subjected to reversed-phase (C18) chromatography on a process-scale high-performance liquid chromatography (HPLC) unit. The heart of the instrumentation is the Millipore Kiloprep chromatograph with the standard 12-l cartridge column. The laboratory housing the

chromatograph has been specifically designed for this work. Tanks for mobile phase preparation are mounted on load cells for precise measurement of components. In this explosion-proof laboratory, all solvent handling areas are well ventilated and a separate breathing air system is provided for the operators. For the purification of the LL-E19020 antibiotics, the mobile phase consisted of a gradient of acetonitrile in 0.1 M ammonium acetate at pH 4.5. The effluent was monitored by UV absorbance at 325 nm. Fractions were collected across the peaks of interest and these were analyzed by analytical HPLC. The maximum yield of LL-E19020 alpha obtained in a single run was approximately 100 g. The antibiotic was recovered from the mobile phase by extraction with methylene chloride. The methylene chloride phase was concentrated under reduced pressure to yield a gummy residue which was finally freeze-dried from tertiary butanol to yield an off-white solid suitable for blending with various feed components.

L23 ANSWER 4 OF 4 MEDLINE on STN
ACCESSION NUMBER: 88086515 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3693121
TITLE: Xylocandin: a new complex of antifungal peptides. I. Taxonomy, isolation and biological activity.
AUTHOR: Meyers E; Bisacchi G S; Dean L; Liu W C; Minassian B; Slusarchyk D S; Sykes R B; Tanaka S K; Trejo W
CORPORATE SOURCE: Squibb Institute for Medical Research, Princeton, New Jersey 08543-4000.
SOURCE: The Journal of antibiotics, (1987 Nov) Vol. 40, No. 11, pp. 1515-9.
Journal code: 0151115. ISSN: 0021-8820.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198802
ENTRY DATE: Entered STN: 5 Mar 1990
Last Updated on STN: 5 Mar 1990
Entered Medline: 8 Feb 1988

AB Xylocandin is a complex of novel peptides with potent antifungal activity that is produced by Pseudomonas cepacia ATCC 39277. The complex was isolated from the fermentation broth by extraction with butanol-methanol, 9:1, followed by collection of the precipitate formed upon concentration of the solvent extract. Purification was effected by chromatography on reversed phase and size exclusion gels followed by TLC on silica gel. These techniques afforded eight components: A1, A2, B1, B2, C1, C2, D1 and D2. A mixture of the two closely related components, xylocandins A1 and A2, displayed potent anticandidal and antidermatophytic activities in vitro. The activity was diminished by the presence of serum or vaginal washings. No antibacterial activity was demonstrable.

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=> d his

     (FILE 'HOME' ENTERED AT 10:47:32 ON 27 MAR 2007)

     FILE 'CAPLUS, MEDLINE' ENTERED AT 10:47:51 ON 27 MAR 2007
L1             0 S ACARBOSE (P) FERMENTATION (P) ALCOHOL
L2             3 S ACARBOSE (P) FERMENTATION BROTH?
L3             1 S ACARBOSE (P) ALCOHOL? (P) PRECIPIT?
L4             0 S ACARBOSE (P) ALCOHOL? (P) CONCENTRAT?
L5             1 S ACARBOSE (P) ETHANOL? (P) PRECIPIT?
L6             1 S ACARBOSE (P) ?ANOL (P) PRECIPIT?
L7             1 S ACARBOSE (P) ?ANOL (P) CONCENT?
L8             0 S ALCOHOL? (P) FERMENTATION BROTH? (P) PRCIPIT?
L9             1 S ACARBOSE (P) ?ANOL (P) CHROMATOGRA?
L10            1 S ACARBOSE (P) ALCOHOL? (P) CHROMATOGRA?
L11            2 S ACARBOSE (P) ALCOHOL? (P) ENZYM?
L12            0 S ACARBOSE (P) ?AMYLOGLUCOSIDASE? (P) COLUMN?
L13            3 S ACARBOSE (P) ?AMYLOGLUCOSIDASE?
L14           16 S ACARBOSE (P) AFFINITY (P) CHROMATOGRA?
L15            0 S ACARBOSE (P) ?AMYLOGLUCOSIDASE? (P) CHROMAT?
L16            6 S ACARBOSE (P) ?FERMENTATION?  (P) PURI?
L17            0 S ACARBOSE (P) ?FERMENTATION?  (P) PURE
L18            0 S ACARBOSE (P) ?FERMENTATION?  (P) CATION EXCHANGE
L19            0 S ACARBOSE (P) ?FERMENTATION?  (P) PRECI?
L20            3 S ALCOHOL? (P) FERMENTATION BROTH? (P) PRECIPIT?
L21           15 S ALCOHOL? (P) FERMENTATION BROTH? (P) CONCENT?
L22           40 S ?ANOL (P) FERMENTATION BROTH? (P) CONCENT?
L23            4 S L22 AND PRECI?
L24           36 S L22 NOT L23
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=> d his

     (FILE 'HOME' ENTERED AT 10:47:32 ON 27 MAR 2007)

     FILE 'CAPLUS, MEDLINE' ENTERED AT 10:47:51 ON 27 MAR 2007
L1             0 S ACARBOSE (P) FERMENTATION (P) ALCOHOL
L2             3 S ACARBOSE (P) FERMENTATION BROTH?
L3             1 S ACARBOSE (P) ALCOHOL? (P) PRECIPIT?
L4             0 S ACARBOSE (P) ALCOHOL? (P) CONCENTRAT?
L5             1 S ACARBOSE (P) ETHANOL? (P) PRECIPIT?
L6             1 S ACARBOSE (P) ?ANOL (P) PRECIPIT?
L7             1 S ACARBOSE (P) ?ANOL (P) CONCENT?
L8             0 S ALCOHOL? (P) FERMENTATION BROTH? (P) PRCIPIT?
L9             1 S ACARBOSE (P) ?ANOL (P) CHROMATOGRA?
L10            1 S ACARBOSE (P) ALCOHOL? (P) CHROMATOGRA?
L11            2 S ACARBOSE (P) ALCOHOL? (P) ENZYM?
L12            0 S ACARBOSE (P) ?AMYLOGLUCOSIDASE? (P) COLUMN?
L13            3 S ACARBOSE (P) ?AMYLOGLUCOSIDASE?
L14           16 S ACARBOSE (P) AFFINITY (P) CHROMATOGRA?
L15            0 S ACARBOSE (P) ?AMYLOGLUCOSIDASE? (P) CHROMAT?
L16            6 S ACARBOSE (P) ?FERMENTATION?  (P) PURI?
L17            0 S ACARBOSE (P) ?FERMENTATION?  (P) PURE
L18            0 S ACARBOSE (P) ?FERMENTATION?  (P) CATION EXCHANGE
L19            0 S ACARBOSE (P) ?FERMENTATION?  (P) PRECI?
L20            3 S ALCOHOL? (P) FERMENTATION BROTH? (P) PRECIPIT?
L21           15 S ALCOHOL? (P) FERMENTATION BROTH? (P) CONCENT?
L22           40 S ?ANOL (P) FERMENTATION BROTH? (P) CONCENT?
L23            4 S L22 AND PRECI?
L24           36 S L22 NOT L23
```

L2 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:474833 CAPLUS
DOCUMENT NUMBER: 143:6386
TITLE: Purification process for manufacturing a high purity acarbose
INVENTOR(S): Lin, Chung-Liang; Huang, Tung-Li; Chen, Jeen-Kuan; Wu, Chi-Sheng
PATENT ASSIGNEE(S): Taiwan
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005118686	A1	20050602	US 2004-790069	20040302
JP 2005160463	A	20050623	JP 2004-1337	20040106

PRIORITY APPLN. INFO.: TW 2003-92133913 A 20031202
AB A purification process for manufacturing a high pure acarbose relates to a process for preparing high pure acarbose from acarbose-containing fermentation broth. The acarbose was purified through steps of alc. precipitation, a strongly acidic cation exchanger chromatog. and an immobilized enzyme affinity chromatog. Acarbose is generally applied in treating diabetes.

L2 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:928233 CAPLUS
DOCUMENT NUMBER: 138:3755
TITLE: Method for purification of acarbose
INVENTOR(S): Keri, Vilmos; Deak, Lajos
PATENT ASSIGNEE(S): Hung.
SOURCE: U.S. Pat. Appl. Publ., 7 pp., Cont.-in-part of U. S. Ser. No. 924,271.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002183262	A1	20021205	US 2002-60831	20020130
US 2002111320	A1	20020815	US 2001-924271	20010807
WO 2003014135	A1	20030220	WO 2002-US2705	20020130

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2000-223492P P 20000807
US 2001-924271 A2 20010807
AB The present invention relates to a novel process for the preparation of acarbose. Said process comprises the steps of: acidifying a fermentation broth containing an acarbose; removing particulates from the fermentation broth; adsorbing

the acarbose on a cation-exchanger in the presence of an anion of a weak acid; eluting the acarbose from the cation-exchanger with at least one of a sodium chloride solution and a salt solution; precipitating the acarbose with a solvent; and recovering the precipitated acarbose.

L2 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:123021 CAPLUS
DOCUMENT NUMBER: 136:182542
TITLE: Method for purification of acarbose
INVENTOR(S): Keri, Vilmos; Deak, Lajos
PATENT ASSIGNEE(S): Biogal Gyogyszergyar Rt., Hung.; Teva Pharmaceuticals USA, Inc.
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002012256	A1	20020214	WO 2001-US24729	20010807
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2001084741	A5	20020218	AU 2001-84741	20010807
EP 1309601	A1	20030514	EP 2001-963821	20010807
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

PRIORITY APPLN. INFO.: US 2000-223492P P 20000807
WO 2001-US24729 W 20010807

AB The present invention relates to a novel process for the preparation of acarbose. Said process comprises the steps of: acidifying a fermentation broth containing an acarbose; removing particulates from the fermentation broth; adsorbing the acarbose on a cation-exchanger in the presence of an anion of a weak acid; eluting the acarbose from the cation-exchanger with at least one of hydrochloric acid and the weak acid; precipitating the acarbose with a solvent; and separating the acarbose crystals.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 1 OF 1 MEDLINE on STN
ACCESSION NUMBER: 87190439 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3106037
TITLE: Purification and characterization of extracellular alpha-amylase and glucoamylase from the yeast Candida antarctica CBS 6678.
AUTHOR: De Mot R; Verachtert H
SOURCE: European journal of biochemistry / FEBS, (1987 May 4) Vol. 164, No. 3, pp. 643-54.
Journal code: 0107600. ISSN: 0014-2956.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198706
ENTRY DATE: Entered STN: 3 Mar 1990
Last Updated on STN: 3 Mar 1990
Entered Medline: 25 Jun 1987

AB An alpha-amylase and a glucoamylase were purified to homogeneity from the culture fluid of beta-cyclodextrin-grown Candida antarctica CBS 6678 by protamine sulfate treatment, ammonium sulfate precipitation, gel filtration (Sephadex G-75 sf, Ultrogel AcA 54), DEAE-Sephacel chromatography, hydroxyapatite chromatography and affinity chromatography on acarbose--AH-Sepharose 4B. Both enzymes were monomeric glycoproteins with fairly different amino acid compositions. Their apparent relative molecular mass, sedimentation coefficient (Szero20,w), isoelectric point, absorption coefficient (280 nm), pH and temperature optima were estimated as 48,500, 4.7 S, 10.1, 1.74 cm2 mg-1, 4.2 and 57 degrees C, respectively, for glucoamylase and as 50,000, 4.9 S, 10.3, 1.53 cm2 mg-1, 4.2 and 62 degrees C, respectively, for alpha-amylase. Kinetic analyses indicated that both enzymes preferentially hydrolyzed high-molecular-mass substrates, including some raw starches. alpha-Amylase was active on cyclodextrins, whereas debranching activity was demonstrated for glucoamylase. Trestatins were potent inhibitors of both alpha-amylase (Ki less than 1 microM) and glucoamylase (Ki less than 0.1 microM), being more effective than Bay e 4609 (Ki less than 10 microM). Glucoamylase was selectivity and strongly inhibited by acarbose (Ki less than 0.1 microM). Activity of the latter enzyme was also affected by 1-deoxynojirimycin (Ki less than 1 mM), maltitol and amino alcohols (Ki less than 10 mM). Unlike alpha-amylase, glucoamylase adsorbed strongly onto raw starch, the adsorption site being non-identical with the active site.

L5 ANSWER 1 OF 1 MEDLINE on STN
ACCESSION NUMBER: 2006721500 IN-PROCESS
DOCUMENT NUMBER: PubMed ID: 16909265
TITLE: Pullulan production by tropical isolates of Aureobasidium pullulans.
AUTHOR: Prasongsuk Sehanat; Berhow Mark A; Dunlap Christopher A; Weisleder David; Leathers Timothy D; Eveleigh Douglas E; Punnapayak Hunsa
CORPORATE SOURCE: Plant Biomass Utilization Research Unit, Department of Botany, Faculty of Science, Chulalongkorn University, Bangkok, Thailand.
SOURCE: Journal of industrial microbiology & biotechnology, (2007 Jan) Vol. 34, No. 1, pp. 55-61. Electronic Publication: 2006-08-15.
Journal code: 9705544. ISSN: 1367-5435.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 13 Dec 2006
Last Updated on STN: 27 Feb 2007

AB Tropical isolates of Aureobasidium pullulans previously isolated from distinct habitats in Thailand were characterized for their capacities to produce the valuable polysaccharide, pullulan. A. pullulans strain NRM2, the so-called "color variant" strain, was the best producer, yielding 25.1 g pullulan l(-1) after 7 days in sucrose medium with peptone as the nitrogen source. Pullulan from strain NRM2 was less pigmented than those from the other strains and was remarkably pure after a simple ethanol precipitation. The molecular weight of pullulan from all cultures dramatically decreased after 3 days growth, as analyzed by high performance size exclusion chromatography. Alpha-amylase with apparent activity against pullulan was expressed constitutively in sucrose-grown cultures and induced in starch-grown cultures. When the alpha-amylase inhibitor acarbose was added to the culture medium, pullulan of slightly higher molecular weight was obtained from late cultures, supporting the notion that alpha-amylase plays a role in the reduction of the molecular weight of pullulan during the production phase.

L9 ANSWER 1 OF 1 MEDLINE on STN
ACCESSION NUMBER: 2006721500 IN-PROCESS
DOCUMENT NUMBER: PubMed ID: 16909265
TITLE: Pullulan production by tropical isolates of Aureobasidium pullulans.
AUTHOR: Prasongsuk Sehanat; Berhow Mark A; Dunlap Christopher A; Weisleder David; Leathers Timothy D; Eveleigh Douglas E; Punnapayak Hunsa
CORPORATE SOURCE: Plant Biomass Utilization Research Unit, Department of Botany, Faculty of Science, Chulalongkorn University, Bangkok, Thailand.
SOURCE: Journal of industrial microbiology & biotechnology, (2007 Jan) Vol. 34, No. 1, pp. 55-61. Electronic Publication: 2006-08-15.
Journal code: 9705544. ISSN: 1367-5435.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 13 Dec 2006
Last Updated on STN: 27 Feb 2007

AB Tropical isolates of Aureobasidium pullulans previously isolated from distinct habitats in Thailand were characterized for their capacities to produce the valuable polysaccharide, pullulan. A. pullulans strain NRM2, the so-called "color variant" strain, was the best producer, yielding 25.1 g pullulan l(-1) after 7 days in sucrose medium with peptone as the nitrogen source. Pullulan from strain NRM2 was less pigmented than those from the other strains and was remarkably pure after a simple ethanol precipitation. The molecular weight of pullulan from all cultures dramatically decreased after 3 days growth, as analyzed by high performance size exclusion chromatography. Alpha-amylase with apparent activity against pullulan was expressed constitutively in sucrose-grown cultures and induced in starch-grown cultures. When the alpha-amylase inhibitor acarbose was added to the culture medium, pullulan of slightly higher molecular weight was obtained from late cultures, supporting the notion that alpha-amylase plays a role in the reduction of the molecular weight of pullulan during the production phase.

L10 ANSWER 1 OF 1 MEDLINE on STN
ACCESSION NUMBER: 87190439 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3106037
TITLE: Purification and characterization of extracellular alpha-amylase and glucoamylase from the yeast Candida antarctica CBS 6678.
AUTHOR: De Mot R; Verachtert H
SOURCE: European journal of biochemistry / FEBS, (1987 May 4) Vol. 164, No. 3, pp. 643-54.
Journal code: 0107600. ISSN: 0014-2956.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198706
ENTRY DATE: Entered STN: 3 Mar 1990
Last Updated on STN: 3 Mar 1990
Entered Medline: 25 Jun 1987

AB An alpha-amylase and a glucoamylase were purified to homogeneity from the culture fluid of beta-cyclodextrin-grown Candida antarctica CBS 6678 by protamine sulfate treatment, ammonium sulfate precipitation, gel filtration (Sephadex G-75 sf, Ultrogel AcA 54), DEAE-Sephacel chromatography, hydroxyapatite chromatography and affinity chromatography on acarbose--AH-Sepharose 4B. Both enzymes were monomeric glycoproteins with fairly different amino acid compositions. Their apparent relative molecular mass, sedimentation coefficient (Szero20,w), isoelectric point, absorption coefficient (280 nm), pH and temperature optima were estimated as 48,500, 4.7 S, 10.1, 1.74 cm2 mg-1, 4.2 and 57 degrees C, respectively, for glucoamylase and as 50,000, 4.9 S, 10.3, 1.53 cm2 mg-1, 4.2 and 62 degrees C, respectively, for alpha-amylase. Kinetic analyses indicated that both enzymes preferentially hydrolyzed high-molecular-mass substrates, including some raw starches. alpha-Amylase was active on cyclodextrins, whereas debranching activity was demonstrated for glucoamylase. Trestatins were potent inhibitors of both alpha-amylase (Ki less than 1 microM) and glucoamylase (Ki less than 0.1 microM), being more effective than Bay e 4609 (Ki less than 10 microM). Glucoamylase was selectivity and strongly inhibited by acarbose (Ki less than 0.1 microM). Activity of the latter enzyme was also affected by 1-deoxynojirimycin (Ki less than 1 mM), maltitol and amino alcohols (Ki less than 10 mM). Unlike alpha-amylase, glucoamylase adsorbed strongly onto raw starch, the adsorption site being non-identical with the active site.

L11 ANSWER 1 OF 2 MEDLINE on STN
ACCESSION NUMBER: 2006272479 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16700860
TITLE: Diabetes prevention: is there more to it than lifestyle changes?.
AUTHOR: Gruber A; Nasser K; Smith R; Sharma J C; Thomson G A
CORPORATE SOURCE: Sherwood Forest Hospitals NHS Trust, King's Mill Hospital, Sutton-in-Ashfield, Nottinghamshire, UK.. agruber@doctors.org.uk
SOURCE: International journal of clinical practice, (2006 May) Vol. 60, No. 5, pp. 590-4. Ref: 30
Journal code: 9712381. ISSN: 1368-5031.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200607
ENTRY DATE: Entered STN: 17 May 2006
Last Updated on STN: 26 Jul 2006
Entered Medline: 25 Jul 2006

AB Over the past years, there has been an explosive increase in the prevalence of type 2 diabetes (T2DM) and this is expected to continue, entailing associated morbidity and mortality. An increasing number of studies explore the different ways T2DM could be prevented. On-going lifestyle modifications need to be addressed. High-risk patients should be given counselling on weight loss, possibly using a low glycaemic index diet, with a target of around 7-10% over 6-12 months, as well as instruction for increasing physical activity to around 150 min of physical exercise weekly (NNT = 4-8). Moderate alcohol consumption and coffee consumption may also be of benefit (NNT = 89 and 66, respectively). Metformin (NNT = 14), acarbose (NNT = 11) and troglitazone (NNT = 6) have been shown to prevent/delay T2DM and angiotensin-converting enzyme (ACE) inhibitors and statins appear to have an adjunctive role (NNT = 42 and 112, respectively). Trials with orlistat and bariatric surgery have also prevented T2DM (NNT = 36 and 6, respectively), and forthcoming treatment with GLP1 mimetics appears promising. Diabetes prevention studies should help create well-defined strategies for screening and treating high-risk populations in the real world, as prevention is our only chance to alleviate the ever growing burden of diabetes mellitus in the world.

L11 ANSWER 2 OF 2 MEDLINE on STN
ACCESSION NUMBER: 87190439 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3106037
TITLE: Purification and characterization of extracellular alpha-amylase and glucoamylase from the yeast Candida antarctica CBS 6678.
AUTHOR: De Mot R; Verachtert H
SOURCE: European journal of biochemistry / FEBS, (1987 May 4) Vol. 164, No. 3, pp. 643-54.
Journal code: 0107600. ISSN: 0014-2956.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198706
ENTRY DATE: Entered STN: 3 Mar 1990
Last Updated on STN: 3 Mar 1990
Entered Medline: 25 Jun 1987

AB An alpha-amylase and a glucoamylase were purified to homogeneity from the culture fluid of beta-cyclodextrin-grown Candida antarctica CBS 6678 by protamine sulfate treatment, ammonium sulfate precipitation, gel

filtration (Sephadex G-75 sf, Ultrogel AcA 54), DEAE-Sephacel chromatography, hydroxyapatite chromatography and affinity chromatography on acarbose--AH-Sepharose 4B. Both enzymes were monomeric glycoproteins with fairly different amino acid compositions. Their apparent relative molecular mass, sedimentation coefficient (Szero20,w), isoelectric point, absorption coefficient (280 nm), pH and temperature optima were estimated as 48,500, 4.7 S, 10.1, 1.74 cm2 mg-1, 4.2 and 57 degrees C, respectively, for glucoamylase and as 50,000, 4.9 S, 10.3, 1.53 cm2 mg-1, 4.2 and 62 degrees C, respectively, for alpha-amylase. Kinetic analyses indicated that both enzymes preferentially hydrolyzed high-molecular-mass substrates, including some raw starches. alpha-Amylase was active on cyclodextrins, whereas debranching activity was demonstrated for glucoamylase. Trestatins were potent inhibitors of both alpha-amylase (Ki less than 1 microM) and glucoamylase (Ki less than 0.1 microM), being more effective than Bay e 4609 (Ki less than 10 microM). Glucoamylase was selectivity and strongly inhibited by acarbose (Ki less than 0.1 microM). Activity of the latter enzyme was also affected by 1-deoxynojirimycin (Ki less than 1 mM), maltitol and amino alcohols (Ki less than 10 mM). Unlike alpha-amylase, glucoamylase adsorbed strongly onto raw starch, the adsorption site being non-identical with the active site.

L13 ANSWER 2 OF 3 MEDLINE on STN
ACCESSION NUMBER: 94102356 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8276068
TITLE: Changes in islet glucan-1,4-alpha-glucosidase activity modulate sulphonylurea-induced but not cholinergic insulin secretion.
AUTHOR: Salehi A; Lundquist I
CORPORATE SOURCE: Department of Pharmacology, University of Lund, Sweden.
SOURCE: European journal of pharmacology, (1993 Oct 19) Vol. 243, No. 2, pp. 185-91.
Journal code: 1254354. ISSN: 0014-2999.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: (COMPARATIVE STUDY)
(IN VITRO)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199402
ENTRY DATE: Entered STN: 18 Feb 1994
Last Updated on STN: 3 Mar 2000
Entered Medline: 4 Feb 1994

AB We have previously presented indirect in vivo evidence for the involvement of islet acid glucan-1,4-alpha-glucosidase (acid amyloglucosidase), a lysosomal glucose-producing enzyme, in certain insulin secretory processes. In the present in vitro and in vivo investigation, we studied whether differential changes in islet acid amyloglucosidase activity would be related to the insulin secretory response induced by two mechanistically different secretagogues, the sulphonylurea derivative, glibenclamide and the acetylcholine receptor agonist, carbachol. It was observed that the selective alpha-glucosidehydrolase inhibitors emiglitate and acarbose markedly reduced glibenclamide-induced insulin release from isolated islets. Insulin release stimulated by carbachol or the protein kinase C activator TPA (12-O-tetradecanoylphorbol 13-acetate), was not inhibited. Basal insulin secretion was unaffected by emiglitate and acarbose. Further, pretreatment of mice with emiglitate resulted in a marked reduction of the in vivo insulin response to glibenclamide. Moreover, in vivo pretreatment with purified fungal amyloglucosidase ('enzyme replacement'), a procedure known to increase islet amyloglucosidase activity, greatly enhanced the insulin response to i.v. glibenclamide. This insulin release was accompanied by a marked depression of the blood glucose levels. In contrast, enzyme pretreatment did not influence the insulin response or the blood glucose levels after carbachol. The data strongly suggest that islet acid amyloglucosidase is involved in the insulin secretory processes induced by glibenclamide but not in those involving stimulation of muscarinic receptors or direct activation of protein kinase C. The results also indicate separate or at least partially separate pathways for insulin release induced by glibenclamide and cholinergic stimulation.

L13 ANSWER 3 OF 3 MEDLINE on STN
ACCESSION NUMBER: 92279185 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1594557
TITLE: The relationship of islet amyloglucosidase activity and glucose-induced insulin secretion.
AUTHOR: Lundquist I; Panagiotidis G
CORPORATE SOURCE: Department of Cell Biology, Faculty of Health Sciences, University of Linkoping, Sweden.
SOURCE: Pancreas, (1992) Vol. 7, No. 3, pp. 352-7.
Journal code: 8608542. ISSN: 0885-3177.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)

LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199207
ENTRY DATE: Entered STN: 10 Jul 1992
Last Updated on STN: 3 Mar 2000
Entered Medline: 2 Jul 1992

AB We have previously presented evidence for the involvement of islet acid amyloglucosidase, a lysosomal glycogen-hydrolyzing enzyme, in certain insulin secretory processes. In the present investigation, we studied whether differential changes in islet amyloglucosidase activity could be related to the insulin secretory response to glucose. It was observed that the dose-response curve for glucose-induced insulin response in vivo was shifted to the left by pretreatment of mice with purified fungal amyloglucosidase. In enzyme-pretreated mice, the ED50 was 2.1 mmol/kg glucose as compared with 5.7 mmol/kg in saline-pretreated controls (p less than 0.005). Also, the maximal insulin response to glucose was enhanced by amyloglucosidase pretreatment. Parenteral administration to mice (four injections during 2 days) of the pseudotetrasaccharide acarbose, a recognized inhibitor of intestinal alpha-glucosidases, surprisingly induced a marked increase in the activities of islet acid amyloglucosidase (+ 120%; p less than 0.001) and acid alpha-glucosidase (+ 45%; p less than 0.01) without affecting the activities of other lysosomal enzymes such as acid phosphatase and N-acetyl-beta-D-glucosaminidase. No effect on the microsomal neutral alpha-glucosidase was recorded. Moreover, in these mice, the insulin secretory response to glucose was enhanced both at a maximal dose of glucose 11.1 mmol/kg and at a dose in the ED25-ED50 range, 3.3 mmol/kg (p less than 0.005). Direct addition of acarbose to islet homogenates strongly suppressed acid amyloglucosidase activity, the EC50 being approximately 1 microM. Acid alpha-glucosidase activity was also strongly inhibited, whereas the activities of acid phosphatase and N-acetyl-beta-D-glucosaminidase were unaffected. Neutral alpha-glucosidase was slightly suppressed.(ABSTRACT TRUNCATED AT 250 WORDS)

L14 ANSWER 8 OF 16 MEDLINE on STN
ACCESSION NUMBER: 1998203259 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9542155
TITLE: alpha-Glucosidase from the hepatopancreas of the shrimp, Penaeus vannamei (Crustacea-Decapoda).
AUTHOR: Le Chevalier P; Van Wormhoudt A
CORPORATE SOURCE: Institut Universitaire de Technologie, Quimper, France.. chevalie@iutquimp.univ-brest.fr
SOURCE: The Journal of experimental zoology, (1998 Apr 15) Vol. 280, No. 6, pp. 384-94.
Journal code: 0375365. ISSN: 0022-104X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199805
ENTRY DATE: Entered STN: 20 May 1998
Last Updated on STN: 18 Dec 2002
Entered Medline: 8 May 1998

AB Penaeus vannamei is an omnivorous species, and it can be assumed that a high level of carbohydrates is necessary for growth. Alpha-glucosidases are important enzymes necessary for the ultimate liberation of glucose residues from various carbohydrates. Using acarbose affinity chromatography, a glycosylated alpha-glucosidase with a molecular mass of approximately 105 kDa was isolated for the first time from the hepatopancreas of the shrimp. Exhibiting an optimal catalytic activity in the temperature range from 40 degrees C to 50 degrees C at pH 6, the purified enzyme hydrolyses alpha 1-4 bonds and liberates glucose from different oligo and polysaccharides. By contrast to other known glucosidases, no alpha 1-6 glucose link with hydrolysis has been observed. This could explain the different rates of growth in shrimp aquaculture with starches from various origins. The amino-acid composition, together with the partial sequence of a hydrolytic peptide, shows a high degree of similarity to the alpha-glucosidases reported for various organisms including yeast and fungi and may help determine the phylogeny of the family.

L14 ANSWER 9 OF 16 MEDLINE on STN
ACCESSION NUMBER: 97330817 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9187252
TITLE: Efficient purification, characterization and partial amino acid sequencing of two alpha-1,4-glucan lyases from fungi.
AUTHOR: Yu S; Christensen T M; Kragh K M; Bojsen K; Marcussen J
CORPORATE SOURCE: Danisco Biotechnology, Danisco A/S, Langebrogade 1, Copenhagen K, Denmark.. g7sy@danisco.dk
SOURCE: Biochimica et biophysica acta, (1997 May 23) Vol. 1339, No. 2, pp. 311-20.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199707
ENTRY DATE: Entered STN: 16 Jul 1997
Last Updated on STN: 16 Jul 1997
Entered Medline: 1 Jul 1997

AB alpha-1,4-Glucan lyases from the fungi Morchella costata and M. vulgaris were purified by affinity chromatography on beta-cyclodextrin-sepharose, followed by ion exchange and gel filtration. The purified enzymes produced 1,5-anhydro-D-fructose from glucose oligomers and polymers with alpha-1,4-glucosidic linkages, such as maltose, maltosaccharides, amylopectin, and glycogen. The lyases were

basically inactive towards glucans linked through alpha-1,1, alpha-1,3 or alpha-1,6 linkages. For both enzymes the molecular mass was around 121,000 Da as determined by matrix-assisted laser desorption mass spectrometry. The pI for the lyases from M. costata and M. vulgaris was 4.5 and 4.4, respectively. The lyases exhibited an optimal pH range of pH 5.5 to pH 7.5 with maximal activity at pH 6.5. Optimal temperature was between 37 degrees C and 48 degrees C for the two lyases, depending on the substrates. The lyases were examined with 12 inhibitors to starch hydrolases and it was found that they were inhibited by the -SH group blocking agent PCMB and the following sugars and their analogues: glucose, maltitol, maltose, 1-deoxynojirimycin and acarbose. Partial amino acid sequences accounting for about 35% of the lyase polypeptides were determined. In the overlapping region of the sequences, the two lyases showed 91% identity. The two lyases also cross-reacted immunologically.

L14 ANSWER 10 OF 16 MEDLINE on STN
ACCESSION NUMBER: 96409375 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8814357
TITLE: Thermostability of purified human pancreatic alpha-amylase is increased by the combination of Ca2+ and human serum albumin.
AUTHOR: Tessier A J; Dombi G W; Bouwman D L
CORPORATE SOURCE: Harper Hospital, Department of Surgery, Detroit, MI 48201, USA. atessie/cms.cc.wayne.edu.
SOURCE: Clinica chimica acta; international journal of clinical chemistry, (1996 Aug 15) Vol. 252, No. 1, pp. 11-20. Journal code: 1302422. ISSN: 0009-8981.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199612
ENTRY DATE: Entered STN: 28 Jan 1997
Last Updated on STN: 28 Jan 1997
Entered Medline: 18 Dec 1996

AB Pancreatic fluid from a patient with a post operative pancreatic fistula was used to isolate human alpha-amylase by means of acarbose affinity chromatography. Amylase thermostability was measured in 4 solutions: (1) EDTA-dialyzed; (2) dialyzed solution plus 0.15 mmol/l (1.0 g/dl) human serum albumin; (3) dialyzed solution plus 0.25 mmol/l (1.0 mg/dl) calcium ions; and (4) dialyzed solution with both human serum albumin and calcium ions. Amylase activity was measured at predetermined times in samples heated to 60 degrees C. Thermostability was characterized by t1/2, the time to 50% initial amylase enzyme activity. In the dialyzed solution t1/2 was 0.75 +/- 0.19 min. This rose to 1.62 +/- 0.34 min with added human serum albumin, and to 8.24 +/- 0.13 min with added calcium ions. The combination of human serum albumin and calcium ions resulted in a synergistic increase of t1/2 to 180 +/- 26 min. These findings support our contention that human serum albumin, calcium ions and possibly other body fluid constituents must be considered in any utility involving amylase thermostability as a clinically relevant diagnostic marker.

L14 ANSWER 11 OF 16 MEDLINE on STN
ACCESSION NUMBER: 93277459 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8503847
TITLE: Production, purification and characterization of the catalytic domain of glucoamylase from Aspergillus niger.
AUTHOR: Stoffer B; Frandsen T P; Busk P K; Schneider P; Svendsen I; Svensson B
CORPORATE SOURCE: Carlsberg Laboratory, Department of Chemistry, Valby, Copenhagen, Denmark.
SOURCE: The Biochemical journal, (1993 May 15) Vol. 292 (Pt 1),

pp. 197-202.
Journal code: 2984726R. ISSN: 0264-6021.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199306
ENTRY DATE: Entered STN: 16 Jul 1993
Last Updated on STN: 16 Jul 1993
Entered Medline: 25 Jun 1993

AB The catalytic domain of glucoamylases G1 and G2 from Aspergillus niger is produced in vitro in high yield by limited proteolysis using either subtilisin Novo or subtilisin Carlsberg. Purification by affinity chromatography on an acarbose-Sepharose column followed by ion-exchange chromatography on HiLoad Q-Sepharose leads to separation of a number of structurally closely related forms of domain. The cleavage occurs primarily between Val-470 and Ala-471 as indicated by C-terminal sequencing, whereas the N-terminus is intact. Subtilisin Carlsberg, in addition, produces a type of domain which is hydrolysed before Ser-444, an O-glycosylated residue. This leaves the fragment Ser-444-Val-470 disulphide-bonded to the large N-terminal part of the catalytic domain. Subtilisin Novo, in contrast, tends to yield a minor fraction of forms extending approx. 30-40 amino-acid residues beyond Val-470. The thermostability is essentially the same for the single-chain catalytic domain and the original glucoamylases G1 and G2, whereas the catalytic domain cut between Ser-443 and Ser-444 is less thermostable. For both types of domain the kinetic parameters, Km and kcat., for hydrolysis of maltose are very close to the values found for glucoamylases G1 and G2.

L14 ANSWER 12 OF 16 MEDLINE on STN
ACCESSION NUMBER: 92369111 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1380303
TITLE: Interaction of catalytic-site mutants of Bacillus subtilis alpha-amylase with substrates and acarbose.
AUTHOR: Takase K
CORPORATE SOURCE: Department of Molecular Biology, National Institute of Agrobiological Resources, Ibaraki, Japan.
SOURCE: Biochimica et biophysica acta, (1992 Aug 21) Vol. 1122, No. 3, pp. 278-82.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199209
ENTRY DATE: Entered STN: 9 Oct 1992
Last Updated on STN: 3 Mar 2000
Entered Medline: 22 Sep 1992

AB The interactions of the three catalytic-site mutants of Bacillus subtilis alpha-amylase/(DN176 [Asp-176----Asn], EQ208 [Glu-208----Gln] and DN269 [Asp-269----Asn]) with substrates and a pseudo-oligosaccharide inhibitor, acarbose, have been studied by means of difference absorption spectroscopy and affinity chromatography. The addition of maltopentaose or soluble starch to the inactive mutant enzymes mostly resulted in difference spectra characteristic of tryptophan perturbation, enabling determination of the dissociation constants. The results show that conversion of Glu-208 to Gln greatly enhanced substrate binding, implying that Glu-208 interacts unfavorably with the substrate's ground state, preventing its optimal fit to the active site. The affinity for acarbose was greatly reduced in DN269 and EQ208, but less so in DN176, suggesting that Asp-269 and Glu-208 are more important than Asp-176 in stabilizing the transition state. These results

are consistent with Glu-208 and Asp-269 being the key catalytic residues, as proposed for Taka-amylase A.

L14 ANSWER 13 OF 16 MEDLINE on STN
ACCESSION NUMBER: 91224312 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1709115
TITLE: Topographical and enzymatic characterization of amylases from the extremely thermophilic eubacterium Thermotoga maritima.
AUTHOR: Schumann J; Wrba A; Jaenicke R; Stetter K O
CORPORATE SOURCE: Institut fur Biophysik und Physikalische Biochemie, Universitat Regensburg, Germany.
SOURCE: FEBS letters, (1991 Apr 22) Vol. 282, No. 1, pp. 122-6. Journal code: 0155157. ISSN: 0014-5793.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T) (RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199106
ENTRY DATE: Entered STN: 30 Jun 1991
Last Updated on STN: 29 Jan 1996
Entered Medline: 12 Jun 1991

AB The hyperthermophilic eubacterium Thermotoga maritima uses starch as a substrate, without releasing amylase activity into the culture medium. The enzyme is associated with the 'toga'. Its expression level is too low to allow the isolation of the pure enzyme. Using cycloheptaamylose and acarbose affinity chromatography and common chromatographic procedures, two enzyme fractions are obtained. They differ in specificity, pH-optimum, temperature dependence and stability. Substrate specificity and Ca2+ dependence indicate alpha-, beta- and gluco-amylase activity. Compared with alpha-amylase from Bacillus licheniformis (Tmax = 75 degrees C), the amylases from Thermotoga maritima show exceedingly high thermal stability with an upper temperature limit at 95 degrees C. Significant turnover occurs only between 70 and 100 degrees C, i.e. in the range of viability of the microorganism.

L14 ANSWER 14 OF 16 MEDLINE on STN
ACCESSION NUMBER: 89275526 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2786460
TITLE: Single step affinity chromatographic purification of human alpha-amylase from aspirated duodenal juice and its application in the measurement of pancreatic alpha-amylase synthesis rates in man.
AUTHOR: Ogden J M; O'Keefe S J; Ehlers M R; Kirsch R E; Marks I N
CORPORATE SOURCE: Gastrointestinal Clinic, Groote Schuur Hospital, University of Cape Town Medical School, Republic of South Africa.
SOURCE: Clinica chimica acta; international journal of clinical chemistry, (1989 Feb 28) Vol. 180, No. 2, pp. 129-39. Journal code: 1302422. ISSN: 0009-8981.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198907
ENTRY DATE: Entered STN: 9 Mar 1990
Last Updated on STN: 3 Mar 2000
Entered Medline: 20 Jul 1989

AB Human alpha-amylase was purified from aspirated duodenal juice to electrophoretic homogeneity in a single step by affinity chromatography with the competitive inhibitor acarbose (IC50 = 1.22 mumol/l) as ligand. Duodenal juice was applied to an agarose

resin to which acarbose had been coupled covalently via a 1.9 nm spacer group. Pure alpha-amylase, eluted with free acarbose, had a molecular mass of 55,000, and isoelectrofocusing revealed the presence of six isozymes with pI values of 7.3, 6.8, 6.7, 6.5, 6.4 and 6.3, all of which possessed amylase activity based on positive starch/iodine staining. The potential usefulness of this one-step purification procedure in the measurement of pancreatic alpha-amylase synthesis rates was evaluated in two control patients with non-pancreatic disease. Aspirated duodenal juice was obtained during a pulse/continuous intravenous 4 h infusion of [14C]leucine together with secretin and pancreozymin, and alpha-amylase purified using our protocol. Pancreatic alpha-amylase synthesis rates were determined from the rate of incorporation of [14C]leucine into alpha-amylase; values of 4.4 and 5.1 h were obtained for the two control patients.

L14 ANSWER 15 OF 16 MEDLINE on STN
ACCESSION NUMBER: 87190439 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3106037
TITLE: Purification and characterization of extracellular alpha-amylase and glucoamylase from the yeast Candida antarctica CBS 6678.
AUTHOR: De Mot R; Verachtert H
SOURCE: European journal of biochemistry / FEBS, (1987 May 4) Vol. 164, No. 3, pp. 643-54.
Journal code: 0107600. ISSN: 0014-2956.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198706
ENTRY DATE: Entered STN: 3 Mar 1990
Last Updated on STN: 3 Mar 1990
Entered Medline: 25 Jun 1987

AB An alpha-amylase and a glucoamylase were purified to homogeneity from the culture fluid of beta-cyclodextrin-grown Candida antarctica CBS 6678 by protamine sulfate treatment, ammonium sulfate precipitation, gel filtration (Sephadex G-75 sf, Ultrogel AcA 54), DEAE-Sephacel chromatography, hydroxyapatite chromatography and affinity chromatography on acarbose --AH-Sepharose 4B. Both enzymes were monomeric glycoproteins with fairly different amino acid compositions. Their apparent relative molecular mass, sedimentation coefficient (Szero20,w), isoelectric point, absorption coefficient (280 nm), pH and temperature optima were estimated as 48,500, 4.7 S, 10.1, 1.74 cm2 mg-1, 4.2 and 57 degrees C, respectively, for glucoamylase and as 50,000, 4.9 S, 10.3, 1.53 cm2 mg-1, 4.2 and 62 degrees C, respectively, for alpha-amylase. Kinetic analyses indicated that both enzymes preferentially hydrolyzed high-molecular-mass substrates, including some raw starches. alpha-Amylase was active on cyclodextrins, whereas debranching activity was demonstrated for glucoamylase. Trestatins were potent inhibitors of both alpha-amylase (Ki less than 1 microM) and glucoamylase (Ki less than 0.1 microM), being more effective than Bay e 4609 (Ki less than 10 microM). Glucoamylase was selectivity and strongly inhibited by acarbose (Ki less than 0.1 microM). Activity of the latter enzyme was also affected by 1-deoxynojirimycin (Ki less than 1 mM), maltitol and amino alcohols (Ki less than 10 mM). Unlike alpha-amylase, glucoamylase adsorbed strongly onto raw starch, the adsorption site being non-identical with the active site.

L14 ANSWER 16 OF 16 MEDLINE on STN
ACCESSION NUMBER: 86296199 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3091050
TITLE: Purification of glucoamylase by acarbose (BAY g-5421) affinity chromatography.
AUTHOR: Ono K; Smith E E

CONTRACT NUMBER: DE-03118 (NIDCR)
SOURCE: Biotechnology and applied biochemistry, (1986 Apr-Jun) Vol. 8, No. 2-3, pp. 201-9.
Journal code: 8609465. ISSN: 0885-4513.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198610
ENTRY DATE: Entered STN: 21 Mar 1990
Last Updated on STN: 3 Mar 2000
Entered Medline: 23 Oct 1986

AB Aspergillus niger and Rhizopus sp. glucoamylases were purified on an affinity chromatography column from commercially available, impure enzyme preparations. Up to 2 mg of glucoamylase protein was bound without leakage to a 1-ml affinity gel column (0.7 X 2.5 cm) possessing a covalently linked acarbose ligand (1 mg acarbose/g wet gel), and the bound enzyme was specifically released by irrigation of the column with a solution of maltose. A complete cycle of purification was accomplished in about 8 h. Glucoamylases were recovered, in more than 80% yield, free of alpha-amylase activity and possessing specific activities comparable to those of preparations obtained by time-consuming, multistep procedures involving several ion-exchange and hydrophobic column fractionations. Thus, acarbose affinity chromatography provides a general method for the rapid and efficient purification of the glucoamylases, and seems to be ideally suited for scale-up for the commercial purification of these enzymes.

L14 ANSWER 1 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:474833 CAPLUS
DOCUMENT NUMBER: 143:6386
TITLE: Purification process for manufacturing a high purity acarbose
INVENTOR(S): Lin, Chung-Liang; Huang, Tung-Li; Chen, Jeen-Kuan; Wu, Chi-Sheng
PATENT ASSIGNEE(S): Taiwan
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005118686	A1	20050602	US 2004-790069	20040302
JP 2005160463	A	20050623	JP 2004-1337	20040106
PRIORITY APPLN. INFO.:			TW 2003-92133913 A	20031202

AB A purification process for manufacturing a high pure acarbose relates to a process for preparing high pure acarbose from acarbose-containing fermentation broth. The acarbose was purified through steps of alc. precipitation, a strongly acidic cation exchanger chromatog. and an immobilized enzyme affinity chromatog. Acarbose is generally applied in treating diabetes.

L14 ANSWER 2 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1988:524834 CAPLUS
DOCUMENT NUMBER: 109:124834
TITLE: Effective purification of glucoamylase in koji, a solid culture of Aspergillus oryzae on steamed rice, by affinity chromatography using an immobilized acarbose (BAY g-5421)
AUTHOR(S): Ono, Kazuhisa; Shigeta, Seiko; Oka, Satoru
CORPORATE SOURCE: Fac. Eng., Hiroshima Univ., Higashi-Hiroshima, 724, Japan
SOURCE: Agricultural and Biological Chemistry (1988), 52(7), 1707-14
CODEN: ABCHA6; ISSN: 0002-1369
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Glucoamylase (GA) was purified from koji, a solid culture of A. oryzae on steamed rice, by extraction with 1% NaCl solution, precipitation with EtOH, and acarbose affinity chromatog. The purified enzyme was homogeneous on gel filtration, PAGE and SDS-PAGE, ultracentrifugation, and IEF. The enzyme released β-glucose as a sole product from soluble starch and maltooligosaccharides. The other common and inherent features of GAs were also confirmed in the GA from A. oryzae. The enzyme was a glycoprotein containing .apprx.4.8% glucosamine and 7.8% neutral saccharides.

L14 ANSWER 3 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1986:567504 CAPLUS
DOCUMENT NUMBER: 105:167504
TITLE: Purification of glucoamylase by acarbose (BAY g-5421) affinity chromatography
AUTHOR(S): Ono, Kazuhisa; Smith, Eric E.
CORPORATE SOURCE: Sch. Med., Univ. Miami, Miami, FL, 33101, USA
SOURCE: Biotechnology and Applied Biochemistry (1986), 8(2-3), 201-9
CODEN: BABIEC; ISSN: 0885-4513

DOCUMENT TYPE: Journal
LANGUAGE: English
AB Glucoamylase (I) of Aspergillus niger and Rhizopus species was purified from com. available, impure enzyme prepns. by affinity chromatog. on acarbose (II) columns. Up to 2 mg I was bound without leakage to a 1-mL affinity gel column possessing a covalently linked II ligand (1 mg II/g wet gel), and the bound enzyme was specifically released by irrigation of the column with a solution of maltose. A complete cycle of purification was accomplished in .apprx.8 h. Both I activities were recovered in >80% yield, free of α-amylase activity and possessing specific activities comparable to those of prepns. obtained by time-consuming, multistep procedures involving several ion-exchange and hydrophobic column fractionations. Thus, II affinity chromatog. provides a general method for the rapid and efficient purification of I, and appears to be ideally suited for scale-up for the com. purification of these enzymes.

L14 ANSWER 4 OF 16 MEDLINE on STN
ACCESSION NUMBER: 2005550205 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16198511
TITLE: Enzymatic characterization of a maltogenic amylase from Lactobacillus gasseri ATCC 33323 expressed in Escherichia coli.
AUTHOR: Oh Ko-Woon; Kim Myo-Jeong; Kim Hae-Yeong; Kim Byung-Yong; Baik Moo-Yeol; Auh Joong-Hyuck; Park Cheon-Seok
CORPORATE SOURCE: Department of Food Science and Biotechnology, Institute of Life Sciences and Resources, KyungHee University, Yongin 449-701, South Korea.
SOURCE: FEMS microbiology letters, (2005 Nov 1) Vol. 252, No. 1, pp. 175-81. Electronic Publication: 2005-09-19. Journal code: 7705721. ISSN: 0378-1097.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200512
ENTRY DATE: Entered STN: 18 Oct 2005
Last Updated on STN: 18 Dec 2005
Entered Medline: 12 Dec 2005
AB A gene corresponding to a maltogenic amylase (MAase) in Lactobacillus gasseri ATCC 33323 (lgma) was cloned and expressed in Escherichia coli. The recombinant LGMA was efficiently purified 24.3-fold by one-step Ni-NTA affinity chromatography. The final yield and specific activity of the purified recombinant LGMA were 68% and 58.7 U/mg, respectively. The purified enzyme exhibited optimal activity for beta-CD hydrolysis at 55 degrees C and pH 5. The relative hydrolytic activities of LGMA to beta-CD, soluble starch or pullulan was 8:1:1.9. The activity of LGMA was strongly inhibited by most metal ions, especially Zn(2+), Fe(2+), Co(2+) and by EDTA. LGMA possessed some unusual properties distinguishable from typical MAases, such as being in a tetrameric form, having hydrolyzing activity towards the alpha-(1,6)-glycosidic linkage and being inhibited by acarbose.

L14 ANSWER 5 OF 16 MEDLINE on STN
ACCESSION NUMBER: 2004032039 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14732931
TITLE: Structure-based discovery of a new affinity ligand to pancreatic alpha-amylase.
AUTHOR: Westerfors Maria; Tedebark Ulf; Andersson Hans O; Ohrman Sara; Choudhury Devapriya; Ersoy Oguz; Shinohara Yasuro; Axen Andreas; Carredano Enrique; Baumann Herbert
CORPORATE SOURCE: Amersham Biosciences, Bjorkgatan 30, Uppsala, SE-75184, Sweden.
SOURCE: Journal of molecular recognition : JMR, (2003 Nov-Dec) Vol.

16, No. 6, pp. 396-405.
Journal code: 9004580. ISSN: 0952-3499.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200409
ENTRY DATE: Entered STN: 21 Jan 2004
Last Updated on STN: 2 Sep 2004
Entered Medline: 1 Sep 2004

AB A ligand useful for affinity capture of porcine pancreatic alpha-amylase was found by virtual screening of the commercially available compound data base MDL Available Chemicals Directory. Hits from the virtual screening were investigated for binding by nuclear magnetic resonance (NMR) and surface plasmon resonance. Selected compounds were tested for inhibition of the enzyme using a NMR-based assay. One of the binders found was covalently coupled to a chromatographic resin and a column, packed with this resin, could retain alpha-amylase, which subsequently was eluted by introduction of the known inhibitor acarbose to the elution buffer.

L14 ANSWER 6 OF 16 MEDLINE on STN
ACCESSION NUMBER: 2003358724 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12890998
TITLE: Inhibitory effects of human and porcine alpha-amylase on CCK-8-stimulated lipase secretion of isolated rat pancreatic acini.
AUTHOR: Jonas Ludwig; Mikkat Ulrike; Lehmann Renate; Schareck Wolfgang; Walzel Hermann; Schroder Werner; Lopp Hilja; Pussa Tonu; Toomik Peeter
CORPORATE SOURCE: Department of Pathology, Faculty of Medicine, University of Rostock, Germany.. ludwig.jonas@med.uni-rostock.de
SOURCE: Pancreatology : official journal of the International Association of Pancreatology (IAP) ... [et al.], (2003) Vol. 3, No. 4, pp. 342-8.
Journal code: 100966936. ISSN: 1424-3903.
PUB. COUNTRY: Switzerland
DOCUMENT TYPE: (IN VITRO)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200403
ENTRY DATE: Entered STN: 1 Aug 2003
Last Updated on STN: 17 Mar 2004
Entered Medline: 16 Mar 2004

AB Previously we have demonstrated inhibitory effects of the plant lectin wheat germ agglutinin (WGA) on (125)I-CCK-8 binding to pancreatic AR42J cells as well as on CCK-8-stimulated Ca(2+) release and alpha-amylase secretion of rat pancreatic acini or acinar cells. Therefore, it is entirely conceivable that alpha-amylase having several lectin-like carbohydrate recognition domains can modulate the CCK-8 stimulated lipase secretion. Human alpha-amylase, purified from pancreatic juice by affinity chromatography to homogeneity, and commercial porcine pancreatic alpha-amylase inhibit CCK-8-stimulated lipase secretion of rat pancreatic acini in a concentration-dependent manner. Acarbose, a specific inhibitor of alpha-amylase, was without effect on CCK-8-induced cellular lipase secretion. The data presented here provide evidence for a regulatory function of alpha-amylase in CCK-8-stimulated pancreatic secretion.

L14 ANSWER 7 OF 16 MEDLINE on STN

ACCESSION NUMBER: 2000088601 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10620329
TITLE: Kinetics and inhibition of cyclomaltodextrinase from alkalophilic Bacillus sp. I-5.
AUTHOR: Kim M J; Park W S; Lee H S; Kim T J; Shin J H; Yoo S H; Cheong T K; Ryu S; Kim J C; Kim J W; Moon T W; Robyt J F; Park K H
CORPORATE SOURCE: Research Center for New Bio-Materials in Agriculture, Department of Food Science, Seoul National University, Suwon, 441-744, Korea.
SOURCE: Archives of biochemistry and biophysics, (2000 Jan 1) Vol. 373, No. 1, pp. 110-5.
Journal code: 0372430. ISSN: 0003-9861.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200002
ENTRY DATE: Entered STN: 18 Feb 2000
Last Updated on STN: 18 Feb 2000
Entered Medline: 9 Feb 2000

AB The cyclomaltodextrinase from alkalophilic Bacillus sp. I-5 (CDase I-5) was expressed in Escherichia coli and the purified enzyme was used for characterization of the enzyme action. The hydrolysis products were monitored by both HPLC and high-performance ion chromatography analysis that enable the kinetic analysis of the cyclomaltodextrin (CD)-degrading reaction. Analysis of the kinetics of cyclomaltodextrin hydrolysis by CDase I-5 indicated that ring-opening of the cyclomaltodextrin was the major limiting step and that CDase I-5 preferentially degraded the linear maltodextrin chain by removing the maltose unit. The substrate binding affinity of the enzyme was almost same for those of cyclomaltodextrins while the rate of ring-opening was the fastest for cyclomaltoheptaose. Acarbose and methyl 6-amino-6-deoxy-alpha-d-glucopyranoside were relatively strong competitive inhibitors with K(i) values of 1.24 x 10(-3) and 8.44 x 10(-1) mM, respectively. Both inhibitors are likely to inhibit the ring-opening step of the CD degradation reaction.

L16 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:614223 CAPLUS
DOCUMENT NUMBER: 143:208627
TITLE: Process for preparing high purity acarbose
INVENTOR(S): Jiang, Linyu; Lin, Lingtao
PATENT ASSIGNEE(S): Sanda Membrane Science and Technology Xiamen Co., Ltd., Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, No pp. given
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1554662	A	20041215	CN 2003-10117484	20031219
PRIORITY APPLN. INFO.:			CN 2003-10117484	20031219

AB The present invention discloses the preparation process of high purity acarbose. The fermented liquid with acarbose is first separated in the first separation system to eliminate mycelium, soluble protein, culture medium and partial pigment to obtain clear acarbose filtrate; the clear acarbose filtrate is then concentrated, decolorized and desalted to eliminate partial monosaccharide, inorg. salt and other small mol. impurity to obtain clear acarbose concentrated solution; and finally through chromatog. resin adsorption, gradient acid pickling, nano filtering film concentration and spray drying, high purity acarbose product is obtained. The present invention has shortened technol. path, high total acarbose yield and high product purity.

L16 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:474833 CAPLUS
DOCUMENT NUMBER: 143:6386
TITLE: Purification process for manufacturing a high purity acarbose
INVENTOR(S): Lin, Chung-Liang; Huang, Tung-Li; Chen, Jeen-Kuan; Wu, Chi-Sheng
PATENT ASSIGNEE(S): Taiwan
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005118686	A1	20050602	US 2004-790069	20040302
JP 2005160463	A	20050623	JP 2004-1337	20040106
PRIORITY APPLN. INFO.:			TW 2003-92133913 A	20031202

AB A purification process for manufacturing a high pure acarbose relates to a process for preparing high pure acarbose from acarbose-containing fermentation broth. The acarbose was purified through steps of alc. precipitation, a strongly acidic cation exchanger chromatog. and an immobilized enzyme affinity chromatog. Acarbose is generally applied in treating diabetes.

L16 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:928233 CAPLUS
DOCUMENT NUMBER: 138:3755

TITLE: Method for purification of acarbose
INVENTOR(S): Keri, Vilmos; Deak, Lajos
PATENT ASSIGNEE(S): Hung.
SOURCE: U.S. Pat. Appl. Publ., 7 pp., Cont.-in-part of U. S. Ser. No. 924,271.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002183262	A1	20021205	US 2002-60831	20020130
US 2002111320	A1	20020815	US 2001-924271	20010807
WO 2003014135	A1	20030220	WO 2002-US2705	20020130

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2000-223492P P 20000807
US 2001-924271 A2 20010807

AB The present invention relates to a novel process for the preparation of acarbose. Said process comprises the steps of: acidifying a fermentation broth containing an acarbose; removing particulates from the fermentation broth; adsorbing the acarbose on a cation-exchanger in the presence of an anion of a weak acid; eluting the acarbose from the cation-exchanger with at least one of a sodium chloride solution and a salt solution; precipitating the acarbose with a solvent; and recovering the precipitated acarbose.

L16 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:123021 CAPLUS
DOCUMENT NUMBER: 136:182542
TITLE: Method for purification of acarbose
INVENTOR(S): Keri, Vilmos; Deak, Lajos
PATENT ASSIGNEE(S): Biogal Gyogyszergyar Rt., Hung.; Teva Pharmaceuticals USA, Inc.
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002012256	A1	20020214	WO 2001-US24729	20010807

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2001084741 A5 20020218 AU 2001-84741 20010807
EP 1309601 A1 20030514 EP 2001-963821 20010807
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
PRIORITY APPLN. INFO.: US 2000-223492P P 20000807
WO 2001-US24729 W 20010807

AB The present invention relates to a novel process for the preparation of acarbose. Said process comprises the steps of: acidifying a fermentation broth containing an acarbose; removing particulates from the fermentation broth; adsorbing the acarbose on a cation-exchanger in the presence of an anion of a weak acid; eluting the acarbose from the cation-exchanger with at least one of hydrochloric acid and the weak acid; precipitating the acarbose with a solvent; and separating the acarbose crystals.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 5 OF 6 MEDLINE on STN
ACCESSION NUMBER: 2002730321 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12493227
TITLE: Synthesis of acarbose analogues by transglycosylation reactions of Leuconostoc mesenteroides B-512FMC and B-742CB dextransucrases.
AUTHOR: Yoon Seung-Heon; Robyt John F
CORPORATE SOURCE: Laboratory of Carbohydrate Chemistry and Enzymology, 4252 Molecular Biology BLDG, Iowa State University, Ames 50011, USA.
SOURCE: Carbohydrate research, (2002 Nov 29) Vol. 337, No. 24, pp. 2427-35.
Journal code: 0043535. ISSN: 0008-6215.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200307
ENTRY DATE: Entered STN: 21 Dec 2002
Last Updated on STN: 10 Jul 2003
Entered Medline: 9 Jul 2003

AB Two new acarbose analogues were synthesized by the reaction of acarbose with sucrose and dextransucrases from Leuconostoc mesenteroides B-512FMC and B-742CB. The major products for each reaction were subjected to yeast fermentation, and then separated and purified by Bio-Gel P2 gel permeation chromatography and descending paper chromatography. The structures of the products were determined by one- and two-dimensional 1H and 13C NMR spectroscopy and by matrix-assisted laser desorption ionization-time of flight mass spectrometry (MALDI-TOF MS). B-512FMC-dextransucrase produced one major acarbose product, 2(I)-alpha-D-glucopyranosylacarbose and B-742CB-dextransucrase produced two major acarbose products, 2(I)-alpha-D-glucopyranosylacarbose and 3(IV)-alpha-D-glucopyranosylacarbose.

L16 ANSWER 6 OF 6 MEDLINE on STN
ACCESSION NUMBER: 90121329 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2610716
TITLE: Radiosynthesis of [14C]acarbose.
AUTHOR: Maul W; Muller L; Pfitzner J; Rauenbusch E; Schutt H
CORPORATE SOURCE: Pharma Research Center, Bayer AG, Wuppertal, Fed. Rep. of Germany.
SOURCE: Arzneimittel-Forschung, (1989 Oct) Vol. 39, No. 10, pp. 1251-3.
Journal code: 0372660. ISSN: 0004-4172.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199002
ENTRY DATE: Entered STN: 28 Mar 1990
Last Updated on STN: 3 Mar 2000
Entered Medline: 21 Feb 1990

AB Acarbose (O-4,6-dideoxy-4-[[(1S, 4R, 5S, 6S)-4,5,6-trihydroxy-3-(hydroxymethyl)-2-cyclohexen-1-yl]amino]-a-D-glucopyranosyl-(1----4)-O-a-D- glucopyranosyl-(1----4)-4-glucopyranose, Bay g 5421), an a-glucosidase inhibitor from Actinoplanes, has been developed for the treatment of diabetes mellitus. To investigate the pharmacokinetics and the biotransformation, 14C-labelled acarbose ([14C]Bay g 5421) was required. About 37 GBq (1 Ci) D-[U-14C]glucose was used as a precursor to obtain [14C]acarbose with a radiochemical yield of between 1.58 and 2.56%. For fermentation purposes resting cells of the Actinoplanes mutant SN 1667/47 were used under cometabolism conditions with a 10-fold excess of maltose. The specific radioactivities achieved in individual preparations were 7.77 MBq/mg (210 microCi/mg), 8.03 MBq/mg (217 microCi/mg), and 9.14 MBq/mg (247 microCi/mg), with a radiochemical purity of greater than 98% in each case. By hydrolysis and subsequent investigation of the hydrolysis products it was shown that [14C]carbon atoms originating from the radioactive glucose are present only in the core and not in the maltose unit of [14C] acarbose.

L20 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1102375 CAPLUS
TITLE: Fermented wine prepared from fermentation broth of ganoderma mycelium, lycium barbarum fruit, and tomato juice
INVENTOR(S): Du, Xingang; Jin, Fan; Wang, Dexiang
PATENT ASSIGNEE(S): Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1712510	A	20051228	CN 2004-10049656	20040623
PRIORITY APPLN. INFO.:			CN 2004-10049656	20040623

AB The title fermented wine is made by preparing tomato juice; blending 15% of fermentation broth of ganoderma mycelium, 85% of tomato juice, and 3% of Lycium barbarum fruit; grinding; adding sucrose until sugar content is 22%; inoculating 2% of yeast powder and performing alcohol fermentation under 25°C; filtering the fermentation broth to remove residues; concocting with ascorbic acid and potassium sorbate; aging; precipitating and clarifying; filtering for sterilization; and bottling. The fermented wine has good appearance and flavor and is rich in bioactive substances such as ganoderan, Lycium barbarum polysaccharide, superoxide dismutase (SOD), and lycopene; and it has endocrine regulating, immunity enhancing, antioxidative and tumor inhibiting effects.

L20 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1994:603402 CAPLUS
DOCUMENT NUMBER: 121:203402
TITLE: Alcohol precipitation of xanthan gum from pure solutions and fermentation broths
AUTHOR(S): Flahive, J. J., III; Foufopoulos, A.; Etzel, M. R.
CORPORATE SOURCE: Dep. Food Sci. Chem. Eng., Univ. Wisconsin, Madison, WI, USA
SOURCE: Separation Science and Technology (1994), 29(13), 1673-87
CODEN: SSTEDS; ISSN: 0149-6395
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Xanthan gum was precipitated from pure solns. and fermentation broths using either ethanol, isopropanol, or tert-butanol. The compns. of the precipitate and supernatant phases were determined as a function of alc. concentration and used to construct binodal solubility curves with tie lines. Xanthan did not precipitate at bulk-mixture alc. concns. below 37.5% (wt) for ethanol, 35% for isopropanol, and 31% for tert-butanol. As the alc. concentration increased beyond this point, the ppts. first were heavy gels with low xanthan concns. At higher alc. concns., the ppts. were compact and fibrous. The maximum xanthan concentration in the precipitate was 14.5% at 60% ethanol, 23.5% at 50% isopropanol, and 33.5% at 40% tert-butanol in the pure solution precipitation expts. At alc. concns. beyond 75%, the ppts. were brittle and needle-like, which made separation from the

supernatant difficult. The results for the fermentation broth expts. were very similar to those of the pure solution expts. Thus, precipitation using ethanol required the highest alc. usage and resulted in the lowest xanthan concentration in the precipitate Conversely, tert-butanol required the least alc. for precipitation and formed the ppts. highest in xanthan concentration

L20 ANSWER 3 OF 3 MEDLINE on STN
ACCESSION NUMBER: 95146419 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7531193
TITLE: Cepacidine A, a novel antifungal antibiotic produced by Pseudomonas cepacia. I. Taxonomy, production, isolation and biological activity.
AUTHOR: Lee C H; Kim S; Hyun B; Suh J W; Yon C; Kim C; Lim Y; Kim C
CORPORATE SOURCE: R&D Center, Cheil Foods & Chemicals Inc., Kyunggi-Do, South Korea.
SOURCE: The Journal of antibiotics, (1994 Dec) Vol. 47, No. 12, pp. 1402-5.
Journal code: 0151115. ISSN: 0021-8820.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199503
ENTRY DATE: Entered STN: 16 Mar 1995
Last Updated on STN: 29 Jan 1996
Entered Medline: 6 Mar 1995

AB Cepacidine A is a potent antifungal antibiotic produced by Pseudomonas cepacia AF 2001. The compound was isolated from the fermentation broth with 1 vol isopropyl alcohol, followed by the collection of the precipitation formed upon concentration of the extract. Purification was effected by chromatography on Diaion HP-20, alumina and reversed phase C18 followed by TLC on silica gel. These techniques afforded the two closely related compounds, cepacidine A1 and cepacidine A2. A mixture of these two compounds called capacidine A, showed high in vitro antifungal activity against the various animal and plant pathogenic fungi. The activity was diminished by the presence of serum. No antibacterial activity was demonstrable.

L21 ANSWER 8 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2002480138 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12242633
TITLE: Ethanol production from corn cob hydrolysates by Escherichia coli KO11.
AUTHOR: de Carvalho Lima K G; Takahashi C M; Alterthum F
CORPORATE SOURCE: Departamento de Microbiologia, Instituto de Ciencias Biomedicas, Universidade de Sao Paulo, Avenida Professor Lineu Prestes, 1374, Cidade Universitaria, Sao Paulo, SP CEP 05508-900, Brazil.
SOURCE: Journal of industrial microbiology & biotechnology, (2002 Sep) Vol. 29, No. 3, pp. 124-8.
Journal code: 9705544. ISSN: 1367-5435.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200301
ENTRY DATE: Entered STN: 21 Sep 2002
Last Updated on STN: 23 Jan 2003
Entered Medline: 22 Jan 2003

AB Corn cob hydrolysates, with xylose as the dominant sugar, were fermented to ethanol by recombinant Escherichia coli KO11. When inoculum was grown on LB medium containing glucose, fermentation of the hydrolysate was completed in 163 h and ethanol yield was 0.50 g ethanol/g sugar. When inoculum was grown on xylose, ethanol yield dropped, but fermentation was faster (113 h). Hydrolysate containing 72.0 g/l xylose and supplemented with 20.0 g/l rice bran was readily fermented, producing 36.0 g/l ethanol within 70 h. Maximum ethanol concentrations were not higher for fermentations using higher cellular concentration inocula. A simulation of an industrial process integrating pentose fermentation by E. coli and hexose fermentation by yeast was carried out. At the first step, E. coli fermented the hydrolysate containing 85.0 g/l xylose, producing 40.0 g/l ethanol in 94 h. Baker's yeast and sucrose (150.0 g/l) were then added to the spent fermentation broth. After 8 h of yeast fermentation, the ethanol concentration reached 104.0 g/l. This two-stage fermentation can render the bioconversion of lignocellulose to ethanol more attractive due to increased final alcohol concentration.

L21 ANSWER 9 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2001548193 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11594400
TITLE: Separation of endo-polygalacturonase using aqueous two-phase partitioning.
AUTHOR: Wu Y T; Pereira M; Venancio A; Teixeira J
CORPORATE SOURCE: Centro de Engenharia Biologica-IBQF, Universidade do Minho, Braga, Portugal.
SOURCE: Journal of chromatography. A, (2001 Sep 21) Vol. 929, No. 1-2, pp. 23-9.
Journal code: 9318488. ISSN: 0021-9673.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200202
ENTRY DATE: Entered STN: 15 Oct 2001
Last Updated on STN: 23 Feb 2002
Entered Medline: 22 Feb 2002

AB The partitioning of endo-polygalacturonase (endo-PG) in polyethylene glycol (PEG)-polyvinyl alcohol (PVA10000) and PEG-hydroxypropyl

starch (Reppal PES100) aqueous two-phase systems was studied, and revealed the possibility of using aqueous two-phase extraction to purify and concentrate endo-PG from its clarified fermentation broth. For the PEG8000-PVA10000 system, endo-PG presented in the fermentation broth (at concentration that is more than 40% of total protein) mainly dominates in the top phase with a partitioning coefficient of 6, while total protein concentrates in the bottom phase. A separation scheme consisting of two consecutive aqueous two-phase extraction steps was proposed: a first extraction in polyethylene glycol (PEG8000)-polyvinyl alcohol system, followed by a second extraction in PEG8000-(NH4)2SO4 system. This allowed the separation of endo-PG from polymer and the recycling of PEG polymer, since endo-PG was very strongly partitioned into the bottom phase of the PEG8000-(NH4)2SO4 system. Laboratory-scale experiments were performed to test the efficiency of this scheme. It was found that enzyme recovery was up to 91% with a total purification factor of about 1.9 and a concentration factor of more than 5. About 90% of the total PEG added into the systems can be recovered, and no reduction was obtained in the purification factor using recycled PEG.

L21 ANSWER 10 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2000485017 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10906239
TITLE: Determination of carbohydrates, sugar alcohols, and glycols in cell cultures and fermentation broths using high-performance anion-exchange chromatography with pulsed amperometric detection.
AUTHOR: Hanko V P; Rohrer J S
CORPORATE SOURCE: Dionex Corporation, 500 Mercury Drive, Sunnyvale, California, 94088-3603, USA.. val_hanko@dionex.com
SOURCE: Analytical biochemistry, (2000 Aug 1) Vol. 283, No. 2, pp. 192-9.
Journal code: 0370535. ISSN: 0003-2697.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200010
ENTRY DATE: Entered STN: 19 Oct 2000
Last Updated on STN: 19 Oct 2000
Entered Medline: 6 Oct 2000

AB Cell cultures and fermentation broths are complex mixtures of organic and inorganic compounds. Many of these compounds are synthesized or metabolized by microorganisms, and their concentrations can impact the yields of desired products. Carbohydrates serve as carbon sources for many microorganisms, while sugar alcohols (alditols), glycols (glycerol), and alcohols (methanol and ethanol) are metabolic products. We used high-performance anion-exchange chromatography with pulsed amperometric detection (HPAE-PAD) to simultaneously analyze for carbohydrates, alditols, and glycerol in growing yeast (Saccharomyces cerevisiae) cultures and their final fermentation broths. Both cultures were grown on complex undefined media, aliquots centrifuged to remove particulates, and the supernatants diluted and directly injected for analysis. Pulsed amperometry allowed a direct detection of the carbohydrates, alditols, and glycols present in the cultures and fermentation broths with very little interference from other matrix components. The broad linear range of three to four orders of magnitude allowed samples to be analyzed without multiple dilutions. Peak area RSDs were 2-7% for 2, 3-butanediol, ethanol, glycerol, erythritol, rhamnose, arabitol, sorbitol, galactitol, mannitol, arabinose, glucose, galactose, lactose, ribose, raffinose, and maltose spiked into a heat-inactivated yeast culture broth supernatant that was analyzed repetitively for 48 h. This method is useful for directly monitoring culture changes during fermentation. The

carbohydrates in yeast cultures were monitored over 1 day. A yeast culture with medium consisting primarily of glucose and trace levels of trehalose and arabinose showed a drop in sugar concentration over time and an increase in glycerol. Yeast growing on a modified culture medium consisting of multiple carbohydrates and alditols showed preference for specific carbon sources and showed the ability to regulate pathways leading to catalysis of alternative carbon sources. Copyright 2000 Academic Press.

L21 ANSWER 11 OF 15 MEDLINE on STN
ACCESSION NUMBER: 1999381223 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10451916
TITLE: An optical biosensor for monitoring recombinant proteins in process media.
AUTHOR: Disley D M; Morrill P R; Sproule K; Lowe C R
CORPORATE SOURCE: Institute of Biotechnology, University of Cambridge, UK.. admin@biotech.cam.ac.uk
SOURCE: Biosensors & bioelectronics, (1999 May 31) Vol. 14, No. 5, pp. 481-93.
Journal code: 9001289. ISSN: 0956-5663.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199909
ENTRY DATE: Entered STN: 13 Sep 1999
Last Updated on STN: 13 Sep 1999
Entered Medline: 2 Sep 1999

AB This paper describes the construction of a sensor for the direct monitoring of a recombinant protein, the human insulin analogue (MI3). The surface plasmon resonance (SPR) sensor incorporates an immobilised, sterilisable affinity-ligand that has been designed to bind to MI3. In practice, gold SPR devices were fabricated with; a 2D assembly of ethanethiol-modified ligand, a 2D mixed-assembly of ethanethiol-modified ligand and mercaptoethanol, a 3D coating of ligand-modified terminal-thiolated poly(vinyl)alcohol (PVA) or a 3D hydrogel of dextran coupled to a self-assembled monolayer (SAM) of mercaptohexaneundecanl-ol. Routine measurement of the concentration MI3 in the concentration range 1-100 mg/l in pilot-scale samples of crude fermentation broth have been achieved with high sensitivity levels and a high signal-to-noise ratio. Analysis can be achieved within < 10 min with the active surface being regenerable for at least 60 cycles over a 6 month period. The coupling of a robust, sterilisable and highly-selective sensor-coating with suitable transducer technologies promises to deliver sensors that are capable of direct in situ monitoring of biopharmaceuticals in industrial bioprocesses.

L21 ANSWER 12 OF 15 MEDLINE on STN
ACCESSION NUMBER: 96017677 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7592020
TITLE: AL072, a novel anti-Legionella antibiotic produced by Streptomyces sp.
AUTHOR: Yon C; Suh J W; Chang J H; Lim Y; Lee C H; Lee Y S; Lee Y W
CORPORATE SOURCE: R & D Center, Cheil Foods & Chemicals Inc., Kyonggi-Do, Korea.
SOURCE: The Journal of antibiotics, (1995 Aug) Vol. 48, No. 8, pp. 773-9.
Journal code: 0151115. ISSN: 0021-8820.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English

FILE SEGMENT: Priority Journals
ENTRY MONTH: 199512
ENTRY DATE: Entered STN: 24 Jan 1996
Last Updated on STN: 6 Feb 1998
Entered Medline: 12 Dec 1995

AB AL072 is a potent anti-Legionella antibiotic produced by Streptomyces strain AL91. The compound was isolated from the fermentation broth with 1 volume of isopropyl alcohol, followed by an ethyl acetate extraction and subsequent concentration under reduced pressure. Purification was performed on an octadecyl silica gel column followed by preparative HPLC. AL072 purified as mentioned above showed extremely specific activity only towards Legionella pneumophila. No antibacterial activity against any other bacteria tested was demonstrable. Its molecular weight was determined by FAB-MS (m/z 648) and the compound was identified as a novel 1,3-diacyl glycerol with the molecular formula C41H76O5. One of the two acyl groups is linoleyl and the other is 3,5-dimethyl octadecanoyl.

L21 ANSWER 13 OF 15 MEDLINE on STN
ACCESSION NUMBER: 95146419 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7531193
TITLE: Cepacidine A, a novel antifungal antibiotic produced by Pseudomonas cepacia. I. Taxonomy, production, isolation and biological activity.
AUTHOR: Lee C H; Kim S; Hyun B; Suh J W; Yon C; Kim C; Lim Y; Kim C
CORPORATE SOURCE: R&D Center, Cheil Foods & Chemicals Inc., Kyunggi-Do, South Korea.
SOURCE: The Journal of antibiotics, (1994 Dec) Vol. 47, No. 12, pp. 1402-5.
Journal code: 0151115. ISSN: 0021-8820.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199503
ENTRY DATE: Entered STN: 16 Mar 1995
Last Updated on STN: 29 Jan 1996
Entered Medline: 6 Mar 1995

AB Cepacidine A is a potent antifungal antibiotic produced by Pseudomonas cepacia AF 2001. The compound was isolated from the fermentation broth with 1 vol isopropyl alcohol, followed by the collection of the precipitation formed upon concentration of the extract. Purification was effected by chromatography on Diaion HP-20, alumina and reversed phase C18 followed by TLC on silica gel. These techniques afforded the two closely related compounds, cepacidine A1 and cepacidine A2. A mixture of these two compounds called capacidine A, showed high in vitro antifungal activity against the various animal and plant pathogenic fungi. The activity was diminished by the presence of serum. No antibacterial activity was demonstrable.

L21 ANSWER 14 OF 15 MEDLINE on STN
ACCESSION NUMBER: 88110801 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3322702
TITLE: Factors affecting the production of amphotericin A.
AUTHOR: Liu Y T; Wu W L; Chiang M H; Hu S J
CORPORATE SOURCE: Institute of Microbiology, National Defense Medical Center, Taipei, ROC.
SOURCE: Zhonghua Minguo wei sheng wu ji mian yi xue za zhi = Chinese journal of microbiology and immunology, (1987 Aug) Vol. 20, No. 3, pp. 247-56.
Journal code: 8008067. ISSN: 0253-2662.
PUB. COUNTRY: TAIWAN: Taiwan, Province of China
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)

(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198803
ENTRY DATE: Entered STN: 5 Mar 1990
Last Updated on STN: 5 Mar 1990
Entered Medline: 10 Mar 1988

AB Factors affecting amphotericin A synthesis of Streptomyces nodosus, NDMC-034 were studied. Iron, magnesium and manganese were found to stimulate amphotericin A synthesis at concentrations ranging from 10-100 microM. The optimum inoculum size, and the pH of production medium before sterilization for producing amphotericin A, were found to be near 10% (v/v) and pH 7.8, respectively. Carrying out fermentation in a complex medium using pharmamedia as nitrogen source resulted in an amphotericin A yield of up to 3.4 g/liter. A novel isolation and purification process for amphotericin A from the fermentation broth was developed, using an extracting isopropyl alcohol and methanolic solution containing 2% CaCl2. Amphotericin A exhibits a much lower acute toxicity in mice than amphotericin B.

L21 ANSWER 15 OF 15 MEDLINE on STN
ACCESSION NUMBER: 77258181 MEDLINE
DOCUMENT NUMBER: PubMed ID: 19818
TITLE: [Use of chemical disinfectants in alcoholic fermentation of must of sugar cane molasses].
Emprego de desinfetante quimico em fermentacao alcoolica de mosto de malaco de cana.
AUTHOR: Brazzach M L; Aquarone E; Colombo A J
SOURCE: Revista de farmacia e bioquimica da Universidade de Sao Paulo, (1976 Jan-Jun) Vol. 14, No. 1, pp. 1-21.
Journal code: 1272000. ISSN: 0370-4726.
PUB. COUNTRY: Brazil
DOCUMENT TYPE: (ENGLISH ABSTRACT)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Portuguese
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197710
ENTRY DATE: Entered STN: 14 Mar 1990
Last Updated on STN: 6 Feb 1995
Entered Medline: 31 Oct 1977

AB The use of hexaclorophene as desinfectant for alcoholic fermentation was studied. Its effect upon alcoholic yield and acidity levels of "beers" and "spirit" was observed. The optimal concentration of hexaclorophene in fermentation broth was found to be 4%.

L21 ANSWER 1 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:286511 CAPLUS
TITLE: Method of brewing cherokee rose fruit wine
INVENTOR(S): Wei, Guozhi
PATENT ASSIGNEE(S): Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1743446	A	20060308	CN 2005-10037554	20050928

PRIORITY APPLN. INFO.: CN 2005-10037554 20050928
AB The title method comprises crushing Cherokee rose fruits, treating with papain and pectinase to obtain a nutrient fluid of carbohydrates, continuously extracting and concentrating, inoculating fruit wine yeast for deep submerged fermentation under 18-21°C to obtain a fermentation broth having alcohol content of 12-13%, ageing for 2-3 months, concocting, filtering, and packaging.

L21 ANSWER 2 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1985:470082 CAPLUS
DOCUMENT NUMBER: 103:70082
TITLE: Measuring the alcohol concentration in an acetic acid fermentation broth
INVENTOR(S): Yamada, Mikio; Mizuno, Masahiro; Tsukamoto, Yoshinori; Yamada, Koki
PATENT ASSIGNEE(S): Nakano Vinegar Co., Ltd., Japan
SOURCE: Ger. Offen., 21 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3441523	A1	19850530	DE 1984-3441523	19841114
DE 3441523	C2	19880225		
JP 60110280	A	19850615	JP 1983-216218	19831118
JP 05002306	B	19930112		
US 4656140	A	19870407	US 1984-669761	19841108

PRIORITY APPLN. INFO.: JP 1983-216218 A 19831118
AB A sample containing the volatile components of a HOAc [64-19-7] fermentation broth is passed, at 80-250°, through a column packed with a HOAc-absorbing material (CaO, NaOH, or soda lime). Following the removal of HOac, EtOH [64-17-5] is determined in the sample using a semiconductor gas sensor or flame-ionization detector by conversion into an elec. signal. Thus, EtOH was determined in the HOAc fermentation broth of a semicontinuous culture using a semiconductor sensor. The results agreed with those shown by a standard method.

L21 ANSWER 3 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2006604693 IN-PROCESS
DOCUMENT NUMBER: PubMed ID: 17037060
TITLE: Screening of a low alcohol dehydrogenase activity mutant of rhizopus oryzae and the regulation of Zn2+ and Mg2+.
AUTHOR: Pan Li-jun; Fu Ping; Zheng Zhi; Luo Shui-zhong; Jiang

Shao-tong
CORPORATE SOURCE: School of Biotechnology and Food Engineering, Hefei University of Technology, Hefei 230009, China.. panlijun@tom.com
SOURCE: Wei sheng wu xue bao = Acta microbiologica Sinica, (2006 Aug) Vol. 46, No. 4, pp. 586-90.
Journal code: 21610860R. ISSN: 0001-6209.
PUB. COUNTRY: China
DOCUMENT TYPE: (ENGLISH ABSTRACT)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Chinese
FILE SEGMENT: NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 14 Oct 2006
Last Updated on STN: 12 Dec 2006

AB Ethanol is the main by-product in the fermentation broth of Rhizopus oryzae As3.3461 for the production of high-optical purity L-lactic acid. Alcohol Dehydrogenase (ADH) is the branch pathway enzyme that catalyzes the transformation of ethanol from pyruvate in Rhizopus oryzae, which decreases the conversion rate of glucose to L-lactic acid. Thus, screening the mutants with lower ADH activity may increase lactate production dramatically. In present study, Rhizopus oryzae As3.3461 was mutated with N-methyl-N'-nitro-N-nitrosoguanidine (NTG), and 21 mutants which showed lower ADH activity were isolated with selective medium of Yeast-Peptone-Dextrose (YPD) containing 0.6% allyl alcohol (V/V). Compared with other mutants, the 12th mutant strain (named as HBF-12) shows the highest conversion rate of L-lactic acid. By contrast with Rhizopus oryzae As3.3461, the parent strain, the ethanol production and the ADH activity of HBF-12 decrease 73.6% and 76%, respectively. Whereas, the L-lactic acid production and the LDH activity of HBF-12 increase 41.2% and 19.6% than those of the parent strain, respectively. The activities of ADH and LDH of HBF-12 were regulated by Zn2+ and Mg2+, but showed opposite effects. Added with Zn2+ to the concentration of 0.01% improves the ADH activity dramatically, but inhibits the activity of LDH. By contraries, added with Mg2+ improves the LDH activity markedly, but inhibits the ADH activity slightly. In fermentation experiment, the addition of Zn2+ and Mg2+ show different effects on the accumulation of ethanol, L-lactic acid and the biomass in mutant HBF-12. When improve the concentration of Zn2+, the accumulation of L-lactic acid and the biomass show the decreased trend, but the production of ethanol show positive effect. With the improvement of the concentration of Mg2+, the production of lactic acid and biomass increase markedly, but no effect on the production of ethanol. When ferment under the concentrations of Zn2+ 0.01% and Mg2+ 0.04% in fermentation medium, the lactate production of HBF-12 reached the highest level, 96.21 g/L.

L21 ANSWER 4 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2005003736 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15630189
TITLE: Isolation and identification of lactic acid bacteria with effect of immune protection to Eschericia coli in mice.
AUTHOR: Ishida-Fujii Keiko; Goto Shingo; Kuboki Hiroshi; Hirano Shin-ichi; Sakamoto Michiko; Sato Michikatsu
CORPORATE SOURCE: R & D Center, Alcohol Enterprise Head Office, New Energy and Industrial Technology Development Organization, 5-1, Inagehigashi 4-chome, Inage-ku, Chiba-shi, Chiba, 263-0031, Japan.. fujii@jp-alcohol.com
SOURCE: BioFactors (Oxford, England), (2004) Vol. 21, No. 1-4, pp. 155-8.
Journal code: 8807441. ISSN: 0951-6433.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals

ENTRY MONTH: 200504
ENTRY DATE: Entered STN: 5 Jan 2005
Last Updated on STN: 19 Apr 2005
Entered Medline: 18 Apr 2005

AB Lactic acid bacteria were isolated from an alcohol fermentation broth, and the activity as a probiotic was examined using pathogenic E. coli. Thirty-six strains exhibiting good growth were isolated in the medium of concentrated mush which was a residue resulted in the alcohol distillation process. One of these strains, Lactobacillus paracasei subsp. paracasei I-5, could be grown in the medium containing 8 vol% ethanol and at 45 degrees C. The characteristics were different from the type strain, L. paracasei subsp. paracasei NBRC 15889. L. paracasei I-5 showed an excellent growth in the concentrated mush, which just diluted two-fold and adjusted the pH. ICR mice were fed with a standard germ-free feed (CMF) and the strain I-5 (7 x 10(9) cells/day) was orally administrated for 11 days prior to the intraperitoneal challenge with pathogenic E. coli Juhl. After the challenge, mice administrated the strain I-5 exhibited a high survival rate and survival extension days ($p < 0.01$) compared with the control. The results suggested that the strain might enhance the animal resistance against microbial pathogens. Neonatal diarrhea caused by E. coli is a serious disease in calf breeding. The strain might be practically valuable to prevent diarrhea in calves.

L21 ANSWER 5 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2003574713 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14654042
TITLE: Determination of amino acids in cell culture and fermentation broth media using anion-exchange chromatography with integrated pulsed amperometric detection.
AUTHOR: Hanko Valoran P; Rohrer Jeffrey S
CORPORATE SOURCE: Dionex Corp, 500 Mercury Drive, Sunnyvale, CA 94088-3603, USA.. val.hanko@dionex.com
SOURCE: Analytical biochemistry, (2004 Jan 1) Vol. 324, No. 1, pp. 29-38.
Journal code: 0370535. ISSN: 0003-2697.
PUB. COUNTRY: United States
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200410
ENTRY DATE: Entered STN: 16 Dec 2003
Last Updated on STN: 13 Oct 2004
Entered Medline: 12 Oct 2004

AB Cell culture and fermentation broth media are used in the manufacture of biotherapeutics and many other biological materials. Characterizing the amino acid composition in cell culture and fermentation broth media is important because deficiencies in these nutrients can reduce desired yields or alter final product quality. Anion-exchange (AE) chromatography using sodium hydroxide (NaOH) and sodium acetate gradients, coupled with integrated pulsed amperometric detection (IPAD), determines amino acids without sample derivatization. AE-IPAD also detects carbohydrates, glycols, and sugar alcohols. The presence of these compounds, often at high concentrations in cell culture and fermentation broth media, can complicate amino acid determinations. To determine whether these samples can be analyzed without sample preparation, we studied the effects of altering and extending the initial NaOH eluent concentration on the retention of 42 different carbohydrates and related compounds, 30 amino acids and related compounds, and 3 additional compounds. We found that carbohydrate retention is impacted in a manner different from that of amino acid retention by a

change in [NaOH]. We used this selectivity difference to design amino acid determinations of diluted cell culture and fermentation broth media, including Bacto yeast extract-peptone-dextrose (yeast culture medium) broth, Luria-Bertani (bacterial culture medium) broth, and minimal essential medium and serum-free protein-free hybridoma medium (mammalian cell culture media). These media were selected as representatives for both prokaryotic and eukaryotic culture systems capable of challenging the analytical technique presented in this paper. Glucose up to 10mM (0.2%, w/w) did not interfere with the chromatography, or decrease recovery greater than 20%, for the common amino acids arginine, lysine, alanine, threonine, glycine, valine, serine, proline, isoleucine, leucine, methionine, histidine, phenylalanine, glutamate, aspartate, cystine, and tyrosine.

L21 ANSWER 6 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2003260855 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12788746
TITLE: 1,8-dihydroxynaphthalene (DHN)-melanin biosynthesis inhibitors increase erythritol production in Torula corallina, and DHN-melanin inhibits erythrose reductase.
AUTHOR: Lee Jung-Kul; Jung Hyung-Moo; Kim Sang-Yong
CORPORATE SOURCE: BioNgene Co., Ltd., Chongro-Ku, Seoul 110-521, Korea.. jkrhee@biongene.com
SOURCE: Applied and environmental microbiology, (2003 Jun) Vol. 69, No. 6, pp. 3427-34.
Journal code: 7605801. ISSN: 0099-2240.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200310
ENTRY DATE: Entered STN: 6 Jun 2003
Last Updated on STN: 2 Oct 2003
Entered Medline: 1 Oct 2003

AB The yeast Torula corallina is a strong erythritol producer that is used in the industrial production of erythritol. However, melanin accumulation during culture represents a serious problem for the purification of erythritol from the fermentation broth. Melanin biosynthesis inhibitors such as 3,4-dihydroxyphenylalanine and 1,8-dihydroxynaphthalene (DHN)-melanin inhibitors were added to the T. corallina cultures. Only the DHN-melanin inhibitors showed an effect on melanin production, which suggests that the melanin formed during the culturing of T. corallina is derived from DHN. This finding was confirmed by the detection of a shunt product of the pentaketide pathway, flaviolin, and elemental analysis. Among the DHN-melanin inhibitors, tricyclazole was the most effective. Supplementation with tricyclazole enhanced the production of erythritol while significantly inhibiting the production of DHN-melanin and DHN-melanin biosynthetic enzymes, such as trihydroxynaphthalene reductase. The erythrose reductase from T. corallina was purified to homogeneity by ion-exchange and affinity chromatography. Purified erythrose reductase was significantly inhibited in vitro in a noncompetitive manner by elevated levels of DHN-melanin. In contrast, the level of erythrose reductase activity was unaffected by increasing concentrations of tricyclazole. These results suggest that supplemental tricyclazole reduces the production of DHN-melanin, which may lead to a reduction in the inhibition of erythrose reductase and a higher yield of erythritol. This is the first report to demonstrate that melanin biosynthesis inhibitors increase the production of a sugar alcohol in T. corallina.

L21 ANSWER 7 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2003058412 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12569628

TITLE: Extractive fermentation for butyric acid production from glucose by Clostridium tyrobutyricum.

AUTHOR: Wu Zetang; Yang Shang-Tian
CORPORATE SOURCE: Department of Chemical Engineering, The Ohio State University, 140 West 19th Avenue, Columbus, Ohio, USA.

SOURCE: Biotechnology and bioengineering, (2003 Apr 5) Vol. 82, No. 1, pp. 93-102.
Journal code: 7502021. ISSN: 0006-3592.
PUB. COUNTRY: United States
DOCUMENT TYPE: (COMPARATIVE STUDY)
(EVALUATION STUDIES)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
(VALIDATION STUDIES)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200309
ENTRY DATE: Entered STN: 6 Feb 2003
Last Updated on STN: 28 Sep 2003
Entered Medline: 26 Sep 2003

AB A novel extractive fermentation for butyric acid production from glucose, using immobilized cells of Clostridium tyrobutyricum in a fibrous bed bioreactor, was developed by using 10% (v/v) Alamine 336 in oleyl alcohol as the extractant contained in a hollow-fiber membrane extractor for selective removal of butyric acid from the fermentation broth. The extractant was simultaneously regenerated by stripping with NaOH in a second membrane extractor. The fermentation pH was self-regulated by a balance between acid production and removal by extraction, and was kept at approximately pH 5.5 throughout the study. Compared with conventional fermentation, extractive fermentation resulted in a much higher product concentration (>300 g/L) and product purity (91%). It also resulted in higher reactor productivity (7.37 g/L. h) and butyric acid yield (0.45 g/g). Without on-line extraction to remove the acid products, at the optimal pH of 6.0, the final butyric acid concentration was only approximately 43.4 g/L, butyric acid yield was 0.423 g/g, and reactor productivity was 6.77 g/L. h. These values were much lower at pH 5.5: 20.4 g/L, 0.38 g/g, and 5.11 g/L. h, respectively. The improved performance for extractive fermentation can be attributed to the reduced product inhibition by selective removal of butyric acid from the fermentation broth. The solvent was found to be toxic to free cells in suspension, but not harmful to cells immobilized in the fibrous bed. The process was stable and provided consistent long-term performance for the entire 2-week period of study.

L23 ANSWER 1 OF 4 MEDLINE on STN
ACCESSION NUMBER: 2006343607 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16756377
TITLE: Purification of xylitol obtained by fermentation of corncob hydrolysates.
AUTHOR: Rivas Beatriz; Torre Paolo; Dominguez Jose Manuel; Converti Attilio; Parajo Juan Carlos
CORPORATE SOURCE: Department of Chemical Engineering, Polytechnical Building, Vigo University (Campus of Ourense), As Lagoas, 32004 Ourense, Spain.
SOURCE: Journal of agricultural and food chemistry, (2006 Jun 14) Vol. 54, No. 12, pp. 4430-5.
Journal code: 0374755. ISSN: 0021-8561.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200608
ENTRY DATE: Entered STN: 8 Jun 2006
Last Updated on STN: 9 Aug 2006
Entered Medline: 8 Aug 2006

AB Hydrolysates obtained by autohydrolysis-posthydrolysis of corncobs were detoxified with charcoal, concentrated, supplemented with nutrients, and fermented with Debaryomyces hansenii. After biomass removal, the fermented media contained 0.1137 kg of nonvolatile components (NVC)/kg of liquor, which corresponded mainly to xylitol (0.6249 kg/kg of NVC) but also to minor amounts of inorganic components (measured as ashes), proteins, nonfermented sugars (xylose and arabinose), uronic acids, arabitol, and other nonvolatile components (ONVC). The media were subjected to further processing (sequential stages of adsorption, concentration, ethanol precipitation, concentration, and crystallization) to obtain food-grade xylitol. Adsorption experiments were carried out at various solid-to-liquor ratios. Under selected conditions (1 kg of charcoal/15 kg of liquors), the xylitol content increased to 0.6873 kg/kg of NVC, and almost total decoloration was achieved. The resulting liquor was concentrated by evaporation to increase its NVC content to 0.4032 kg/kg of liquor (corresponding to a xylitol concentration of 0.280 kg/kg of liquor), and ethanol was added to precipitate a part of the NVC (mainly proteins, but also uronic acids, ashes, and other nonvolatile compounds). Refined liquors (containing 0.7303 kg of xylitol/kg of NVC) were concentrated again, and ethanol was added (to reach 40-60% volume of the stream) to allow crystallization at -10 or -5 degrees C. Under selected conditions, 43.7% of xylitol contained in the initial fermentation broth was recovered in well-formed, homogeneous crystals, in which xylitol accounted for 98.9% of the total oven-dry weight. Material balances are presented for the whole processing scheme considered in this work.

L23 ANSWER 2 OF 4 MEDLINE on STN
ACCESSION NUMBER: 1998125680 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9464404
TITLE: Optimization of exopolysaccharide production by Lactobacillus delbrueckii subsp. bulgaricus RR grown in a semidefined medium.
AUTHOR: Kimmel S A; Roberts R F; Ziegler G R
CORPORATE SOURCE: Department of Food Science, Pennsylvania State University, University Park 16802, USA.
SOURCE: Applied and environmental microbiology, (1998 Feb) Vol. 64, No. 2, pp. 659-64.
Journal code: 7605801. ISSN: 0099-2240.
PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199802
ENTRY DATE: Entered STN: 6 Mar 1998
Last Updated on STN: 6 Mar 1998
Entered Medline: 26 Feb 1998

AB The optimal fermentation temperature, pH, and Bacto-casitone (Difco Laboratories, Detroit, Mich.) concentration for production of exopolysaccharide by Lactobacillus delbrueckii subsp. bulgaricus RR in a semidefined medium were determined by using response surface methods. The design consisted of 20 experiments, 15 unique combinations, and five replications. All fermentations were conducted in a fermentor with a 2.5-liter working volume and were terminated when 90% of the glucose in the medium had been consumed. The population of L. delbrueckii subsp. bulgaricus RR and exopolysaccharide content were measured at the end of each fermentation. The optimum temperature, pH, and Bacto-casitone concentration for exopolysaccharide production were 38 degrees C, 5, and 30 g/liter, respectively, with a predicted yield of 295 mg of exopolysaccharide/liter. The actual yield under these conditions was 354 mg of exopolysaccharide/liter, which was within the 95% confidence interval (217 to 374 mg of exopolysaccharide/liter). An additional experiment conducted under optimum conditions showed that exopolysaccharide production was growth associated, with a specific production at the endpoint of 101.4 mg/g of dry cells. Finally, to obtain material for further characterization, a 100-liter fermentation was conducted under optimum conditions. Twenty-nine grams of exopolysaccharide was isolated from centrifuged, ultrafiltered fermentation broth by ethanol precipitation.

L23 ANSWER 3 OF 4 MEDLINE on STN
ACCESSION NUMBER: 90130823 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2613793
TITLE: Process-scale reversed-phase high-performance liquid chromatography purification of LL-E19020 alpha, a growth promoting antibiotic produced by Streptomyces lydicus ssp. tanzanius.
AUTHOR: Williams D R; Carter G T; Pinho F; Borders D B
CORPORATE SOURCE: American Cyanamid Company, Medical Research Division, Lederle Laboratories, Pearl River, NY 10965.
SOURCE: Journal of chromatography, (1989 Dec 22) Vol. 484, pp. 381-90.
Journal code: 0427043. ISSN: 0021-9673.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199003
ENTRY DATE: Entered STN: 28 Mar 1990
Last Updated on STN: 28 Mar 1990
Entered Medline: 9 Mar 1990

AB LL-E19020 alpha is a novel antibiotic produced by fermentation of the soil microorganism Streptomyces lydicus ssp. tanzanius. The compound is highly effective in inducing increases in weight gain and feed conversion efficiency in livestock. In order to obtain kilogram quantities of the material for field trials, pilot plant scale fermentations (up to 7500 l) were carried out. The antibiotic was recovered from the fermentation broth by solvent extraction. The resultant crude extract was subjected to reversed-phase (C18) chromatography on a process-scale high-performance liquid chromatography (HPLC) unit. The heart of the instrumentation is the Millipore Kiloprep chromatograph with the standard 12-l cartridge column. The laboratory housing the

chromatograph has been specifically designed for this work. Tanks for mobile phase preparation are mounted on load cells for precise measurement of components. In this explosion-proof laboratory, all solvent handling areas are well ventilated and a separate breathing air system is provided for the operators. For the purification of the LL-E19020 antibiotics, the mobile phase consisted of a gradient of acetonitrile in 0.1 M ammonium acetate at pH 4.5. The effluent was monitored by UV absorbance at 325 nm. Fractions were collected across the peaks of interest and these were analyzed by analytical HPLC. The maximum yield of LL-E19020 alpha obtained in a single run was approximately 100 g. The antibiotic was recovered from the mobile phase by extraction with methylene chloride. The methylene chloride phase was concentrated under reduced pressure to yield a gummy residue which was finally freeze-dried from tertiary butanol to yield an off-white solid suitable for blending with various feed components.

L23 ANSWER 4 OF 4 MEDLINE on STN
ACCESSION NUMBER: 88086515 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3693121
TITLE: Xylocandin: a new complex of antifungal peptides. I. Taxonomy, isolation and biological activity.
AUTHOR: Meyers E; Bisacchi G S; Dean L; Liu W C; Minassian B; Slusarchyk D S; Sykes R B; Tanaka S K; Trejo W
CORPORATE SOURCE: Squibb Institute for Medical Research, Princeton, New Jersey 08543-4000.
SOURCE: The Journal of antibiotics, (1987 Nov) Vol. 40, No. 11, pp. 1515-9.
Journal code: 0151115. ISSN: 0021-8820.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198802
ENTRY DATE: Entered STN: 5 Mar 1990
Last Updated on STN: 5 Mar 1990
Entered Medline: 8 Feb 1988

AB Xylocandin is a complex of novel peptides with potent antifungal activity that is produced by Pseudomonas cepacia ATCC 39277. The complex was isolated from the fermentation broth by extraction with butanol-methanol, 9:1, followed by collection of the precipitate formed upon concentration of the solvent extract. Purification was effected by chromatography on reversed phase and size exclusion gels followed by TLC on silica gel. These techniques afforded eight components: A1, A2, B1, B2, C1, C2, D1 and D2. A mixture of the two closely related components, xylocandins A1 and A2, displayed potent anticandidal and antidermatophytic activities in vitro. The activity was diminished by the presence of serum or vaginal washings. No antibacterial activity was demonstrable.